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PART I
HEALTH AND EDUCATION

BY

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PREFACE

It is proposed in this *Yearbook* to consider briefly the different phases of educational administration, supervision, and instruction which have to do with health. Detailed and exhaustive treatment of the various topics enumerated under the several headings would fill several volumes.

The purpose then of this report is to present a synopsis of the field for the discussion of the Society and for the consideration of the teacher and general educator rather than the specialist in school hygiene or physical education.

Recognition is here given of assistance rendered in the preparation of this *Yearbook* by Dr. Edgar Fauver, Miss Caroline Crawford, Miss Mary Reesor, Miss Florence Healy, Miss Josephine Andrews, and Miss Jeanette Seibert.

INTRODUCTION

Health may be considered the keynote, the goal of effort, not only in school hygiene and sanitation, but in the entire physical education of the child, if the word health connotes not simply a normal state of the vegetative organism, but biologic soundness and completeness, present and potential, in respect to the racial as well as the social, industrial, and other obligations of the growing boy and girl. Health is the condition of the individual who is organically sound and who has the biologic basis for the attainment of completeness of body, completeness of mind, and completeness of character.

Health is not the end of life or education but it is an essential condition for the realization of worthy ends, more immediate or ultimate, in the career of the individual. The epigrammatic question may well be reiterated, "What shall it profit a child if he gain the whole world of knowledge and lose his health?" What may a child be allowed to accept, by those in any way responsible, in exchange for any actual or vital part of his health?

The people of this country are rapidly awakening to the appreciation of the national resources. The most important of all the nation's resources is the health of the people, and the most valuable asset in this capital of national vigor is the health of the children. It is the business of the nation to protect from harm at any cost the heirs of all the heritage of the past. During the schooling period the teachers become, as agents of the state, co-trustees with the parents in the great task of guarding, against injury or loss, those upon whom the entire future of the world depends.

Under the most favorable conditions the school is sure to be, in some respects an unhygienic and unsanitary place. Pupils are arbitrarily housed; deprived to a considerable and often serious extent, of fresh air and sunshine at an age when fresh air and sunshine are most important to them. They are confined to the schoolroom; compelled, ofttimes, to sit still and keep still when reasonable freedom of movement is absolutely necessary to self-expression and to balanced development. Scanty provision, if any, is made in most schools for the large activities of muscles and nerves which are as

essential in principle today as they ever were, for the development of the full complement of faculties which are needed for complete living.

The technical material of education, the elaborate processes of instruction, while intended for the welfare of the pupil, may be directly neglectful or subversive of the health interests of the individual child, if not of the majority.

Children are segregated in the schools from all parts of the community under conditions favorable for the collection and distribution of disease contagion at the age when they are most susceptible to such infection. The school then becomes an effective mechanism for the dissemination of disease infection. The most expert care can only partially reduce this danger.

Further, while under the present educational régime the pupil is taught many things, on the whole, and, in consideration of its relative importance, no subject is taught with less intelligence and skill, in more desultory and neglectful fashion than that which deals with health, and with the responsibility of the child in relation to health.

Finally, the very child, for whom the whole educational process exists, is often so handicapped by unrecognized physical defects as to diminish very materially, if not to nullify, the desired effects of educational effort.

If modern education is to fulfil in any worthy degree its complex of obligations to the child, to the home, and to society—in its relation to health—provision must be made in the school for the following phases of administration, supervision, and teaching:

I. The health condition of the pupil should be thoroughly investigated when he enters school and at intervals thereafter, indicated by the age and individual need of the child. Estimation should be made so far as may be possible of the pupil's capacity for biologic, mental, and moral development, so far as this is dependent upon physical condition and health status. The home should furnish information about personal history and habits of the pupil which may contribute to a better adjustment of the child's education and daily life at home or in school. Physical defects should be recognized and reported to the parents. If these defects are remediable the school should co-operate tactfully with the home for their care and

removal. The limitations, capacities, and tendencies of the individual should be understood as clearly as may be, and such knowledge should be utilized in every practicable way in the child's education. Daily and adequate inspection by teacher, nurse, and physician should insure all that is possible for control and prevention of infectious and contagious diseases.

II. The school environment should not only be free from deleterious influences but favorable in every material detail to the highest welfare of the pupil. All the features essential to the health of children—in the schoolhouse, its surroundings, construction, furnishings, and equipment—are within the power to provide, of practically every community in the country. The expense of the things which really affect the health of the pupil in school should be estimated in terms of child-life, child-health, child-efficiency, and only for convenience reduced to dollars and cents. The school should be made, and may be made, the most sanitary place in the community.

III. All the methods and materials of instruction, including the teacher even, should be wisely judged, selected, and adapted with partial and primary reference to their effect upon the health of the pupil. Nothing in modern education which is vital to the schooling of boys and girls need endanger, except through accident, the health and well-being of any pupil. The hygiene of instruction has received far too little attention.

IV. A dominant chord combining two main notes, in close harmony, should run through all the education of the child.

a) The teaching at every reasonable opportunity of the principles of healthful living as related to the individual, the home, and the community.

b) The inculcation in the pupil, by every practicable means, of hygienic habits, so that his conduct affecting himself and those about him may contribute to healthful and successful living.

V. Provision should be made in school for the physical training of the pupil. The child will engage in some of the desirable fundamental motor activities outside of the school in work or in play, at home or elsewhere. The improving curriculum requires progressively more of the large efforts of body and of the motor brain centers. It is the business of the school in physical education to

secure for the pupil that margin of neuro-muscular training, not otherwise provided, which is necessary to health and to the development of those mental, moral, and social qualities which are required for human efficiency in the large, and which are therefore necessary to complete and successful living.

HEALTH EXAMINATIONS

The health examinations of school children have two purposes:

I. To detect, at as early a stage as possible, cases of infectious and contagious disease, so that, by exclusion and isolation, the rest of the pupils and the community may be protected.

II. To discover physical defects and chronic ailments of importance, in order that the limitations of the pupil may be understood and that curable defects and disorders may receive appropriate attention.

If the state requires the unintermittent attendance at school of children from tender age onward for a period of six, seven or eight years, it incurs a large measure of direct responsibility for their physical welfare.[1]

The day is nigh, perhaps, when the elementary school will have quite openly as its first great aim, the conquest of health and sanity for its children. The children are in many cases ill, and if not ailing themselves, are exposed every day to the risk of contact with disease and impurity. The new education discounts the results, however favorable on paper, of a system that ignores this. It recognizes that the creative power is within that gave us all we possess—that it reveals itself in the healthy, the growing, the vigorous, in whom the upward movement of life is not checked. In short, the new education is physiological.[2]

The investigation in school of the health condition of the pupil was undertaken at first for the purpose of detecting and isolating cases of contagious disease. In a few instances statistical studies were made to determine the effect of school life upon health. Comparatively early, investigations of eyesight were undertaken. Great credit is due to Dr. Cohn and others for thoroughgoing pioneer work in this field. Greater emphasis up to the present has been given, in the health examinations, to medical inspection for contagious and infectious diseases than to detection of chronic or permanent defects.

[1] Dawson, *German Workman*, p. 156.

[2] McMillan, *Labour and Childhood.*

Organized medical inspection was begun in various cities and countries as indicated below:

Brussels	1874	London	1891
Paris	1879	New York	1892
Antwerp	1882	Dresden	1893
Hungary	1887	Boston	1894
Moscow	1888	Wiesbaden	1896
Leipzig	1891	Japan	1896

In this country several types of state laws affecting medical inspection have been enacted:

1899. Connecticut passed a law requiring examinations of eyes in all schools.

1903. New Jersey passed a law permitting medical inspection in schools, authorizing the appointment of inspectors and outlining their duties.

1904. Vermont required by law examination of eyes, ears, and throats of school children.

1906. Massachusetts enacted a law making general medical inspection compulsory in all cities and towns.

1909. California enacted a law to "provide for health and development supervision in the public schools of the state of California." This is not a compulsory but a permissive law, intended to authorize boards of school trustees and boards of education to establish health and development supervision in all the public schools of the state. This is apparently the broadest and most comprehensive law relating to the school supervision of child-health which has been passed by any state.

Without state laws, the boards of health in New York, Utah, and California have provided for examinations of eyesight and hearing in the schools. Some form of medical inspection is in operation in about one hundred cities in the United States. At present there are between six and seven hundred regularly appointed school doctors in Germany. In the various forms of health examinations in European countries, much attention has been given to the investigation of physical defects. In the United States, up to the present time, outside of some half-dozen cities, little has been accomplished beyond the inspection for contagious diseases and rather desultory investigations of sight and hearing.

The most comprehensive and successful system of health examination and supervision is that of Wiesbaden. The Wiesbaden

system has become widely and favorably known and has been copied more or less fully by many cities not only in Germany, but in other countries.

About forty towns have adopted the Wiesbaden method *in toto*. In ten years one-fifth of all the German people have caused their children to be educated under the eyes of a school doctor. The whole movement seems to have united a great boldness with great confidence on the part of the people and of the school authorities. Though examinations are not compulsory, barely 4 per cent. of all parents have preferred to have children examined at home.

Information has not been flung away. In Leipzig three-fourths of the parents of delicate and diseased children act at once on advice offered. Only 3.5 per cent. neglect second warning. In Mülhaussen and Berlin parents are invited to conferences of teachers and doctors.

To begin with, Wiesbaden not only respected the rights of parents; it began by taking them entirely into its confidence. A circular is sent out to every parent in the first year of every child's school life. It is really a long and confidential letter (very unlike the leaflets issued from time to time by some educational authorities). It runs as follows:

"For the better protection of the health of children attending the public schools, school doctors have been engaged to undertake the medical inspection of children on entering school, to be responsible for their health as long as they attend the school, and responsible, too, for the building itself from the point of view of the scholars' health.

"These provisions will be of great use both to the children and their parents. In the course of his education, much will be learned with regard to the health and bodily condition of each child, and this new knowledge, which is being gained now for the first time, the school doctors will put at the disposal of the parents with whom henceforth they will work in the interests of the children.

"Parents who, however, do not wish that their children should be examined by school doctors have a right to exempt them, as the new provisions do not refer to educational matters that are in any way compulsory. Such parents, however, must furnish the necessary information from their own doctor."

They would be strange parents who would "take offense" on receiving such a letter as this. With this letter is inclosed another, which requests, in case the examination is agreed to, the presence of the father, mother, or guardian.

The Wiesbaden school doctors make a further examination of children in the third year of their school life—yet another in the fifth year. Finally,

in the eighth and last year, just before the child leaves school, there is a final examination. The doctor has by this time the pupil's health card during school life before him. He has had opportunities of watching this pupil's progress and has the teachers' report to help him. Thus he is more or less in a position to give advice to the parents which should be of use to them in choosing the child's future trade or career in life. And to do this is his parting service to pupil and parent.

The weighing and measuring of children will be done by the class teachers. It is to be carried out half-yearly (measurement to half-centimetre and weight to one-quarter of a kilogramme). The doctor will measure regularly the chest girth of all children who are suspected of having lung disease or whose constitution and health are such that they are under medical control.

The health sheet and the weighing and measuring machines bring home to teachers the fact that the healthy children are passing rapidly through certain stages of growth, and that in the course of time, the contrast presented by them to the undernourished and undergrown gets more and more marked.[2]

Descriptions of certain aspects of the Wiesbaden system will illustrate important points:

Information furnished by parents whose children *are not* examined by the school doctors.

Name of child .....
Born .....School .....
General constitution .....
Mental capacity .....
Respiratory organs .....
Spinal column and extremities.....
Digestive organs .....
Skin (parasites) .....
Eyesight .....
Ear—hearing .....
Mouth, nose, and articulation .....
Special remarks .....
Medical recommendations regarding instruction .....
.....
Wiesbaden..... .....
(Signature of doctor)

NOTE.—Doctors are requested to fill up the form as accurately as possible. The first column "General constitution" should be filled up, and that accord-

[2] McMillan, *op. cit.*

ing to the categories "Good," "Medium," "Bad," with "Chlorosis," "Tuberculosis," etc., in parenthesis as the case may be. The other columns only when symptoms of disease exist. Details of the latter (in the column for "Special Remarks") are particularly desired when the child has been absent from school or receives special attention in instruction and gymnastics. This form must be filled up as often as may appear necessary.[4]

Notice sent to parents as a result of examination in Wiesbaden:

The medical examination (or supervision) ordered by the Magistracy of your child ..... born ..... has shown that it suffers from ..... In the interest of your child's health and of the school it is urgently necessary that.....

(treatment recommended is here stated)

Weisbaden ..... 190.....

The Magistracy

.....[5] (Signed).....

MEDICAL REPORT ON LATE EXAMINATIONS (WIESBADEN)[6]

School. . .Year.. .. .. ..Calendar Year..... .....

School Doctor.....

	1	2	3	1	2	3	1	2	3	Remarks
Class number and number of students.....										
General constitution { Good.... Medium. Bad.....										
Anaemia.....										
Scrofula (Tuberculosis).....										
Rickets.....										
Epilepsy and mental defects....										
Chest and stomach										
Abdominal ruptures.....										
Skin { Lice..... Itch..... Other maladies										
Spinal column and extremities .										
Eye maladies.....										
Defective sight.....										
Mouth and nose.....										
Defective articulation.....										
Under supervision.....										
Free from all ailment.....										

[4] McMillan, *op. cit.*

[5] *Ibid.*

[6] *Ibid.*

A writer on industrial conditions in Germany comments further upon the value and effect of health supervision as related particularly to the attention given to chronic defects.

It might be thought that the attentions of the school doctors, though so well meaning, are regarded as inquisitorial and intrusive. Nevertheless, thanks to the discretion with which the school authorities and the school doctors go about their work, parental opposition has seldom to be encountered, and even initial prejudice is rare. Almost universally, parents welcome the school doctor's advice and help, and not merely facilitate the periodical examinations, but carry out faithfully the directions given. This is more noteworthy since in no German state do the education authorities possess legal powers to compel examinations or to inflict penalties in the case of refusal to undergo them. The whole system rests on a voluntary basis, yet it acts with remarkable efficiency, for tact and suasion have done what coercion would probably have failed to do. Parents are encouraged to regard the school doctors as friends whose only interest is their children's welfare, and the school doctors for their part take diligent care to cultivate confidence by enlisting the co-operation and the presence of the parents at every examination and all through their work as the guardians of the children's health. On the other hand, if a parent prefers that examination shall be made by the family doctor, no objection whatever is raised; all that is asked is that the same careful and exhaustive investigation shall take place, an investigation embracing the same questions and following the same principles, so that uniformity of procedure and of results may be secured, to which end special forms have to be used.

It is, of course, impossible to set forth the success of this system of school hygiene in the form of a bald set of figures, though figures may none the less be cited, eloquent and conclusive in their testimony to invaluable results. In the first place, young children are delayed from entering school whenever their physical or mental condition is such that school life, work and discipline would be harmful to them. In the second place, every detectable weakness of every child is dragged to light and carefully placed on record. Where medical treatment can be resorted to with hope of recovery, directions to that effect are given, and the school doctor, while he does not himself give professional attention, takes care that his advice is duly followed. Where, on the other hand, a child needs exceptional treatment in school the required attention is noted on the health certificate, and it is the duty of the teacher to see that it is faithfully observed. But the most important part of a school doctor's work is the detection of maladies and weaknesses which, but for his scrutiny, would probably have continued to evade the eye both of parents and teachers,

and might have been the source of permanent injury to the children concerned. To cite the case of Berlin: There school doctors were first employed in the year 1902, and of the children notified in that year for primary admission to school 12.3 per cent. had to be put back for varying terms. In 26 per cent. of the cases the reason was general physical weakness, in 16 per cent., delicate constitution, in 10 per cent., tuberculosis of the lungs. Last year (1905) the number of newly registered children examined was 34,562, and of these 2,927, or 8.5 per cent. were put back, while 7,041, or 23.7 per cent. were placed under oversight, making the total number under oversight in that year 24,225. The reason for oversight was defective sight in 22.4 per cent. of the cases, and general weakness in 13 per cent. The doctors' joint report for the year contained the significant remark, "Most of the children in the incipient stages of tuberculosis attend school without either parent or teacher having any suspicion that anything ails them." But at medical oversight in the narrower sense the more progressive towns do not stop, for here and there specialists are employed for the treatment of eye, ear, throat maladies, and in several towns systematic attention is also given to the teeth of all children in the elementary schools.[1]

Noteworthy features in the Wiesbaden system:

1. The means for securing the co-operation and sympathy of parents and teachers.

2. The completeness of the examination.

3. The frequency and regularity of the examination, coming at vital stages of the child's school life.

4. The filing of the health report, a school record, used for reference in connection with the school work of the child.

5. The scientific and educational interest of the doctors which insures thorough examinations and wins co-operation of teacher and parent.

6. The popular nature of the movement as it has developed among the people and has not been imposed by a central government.

7. The movement is an integral part of the school system and is treated primarily as an educational problem.

Some of the practical, direct and indirect results of the Wiesbaden system may be stated thus:

1. Children of subnormal type are profitably delayed in entering school.

2. Individual children are made happier and more efficient.

[1] Dawson, *German Workman*.

3. Teachers are relieved by special individual adjustment of the weaker children.

4. To the movement can be traced:

a) The forming of special classes for defectives requiring modified treatment.

b) Installation of school baths.

c) Providing free meals for school children.

d) Establishment of free clinics and dispensaries for treatment of child ailments.

e) Founding of outdoor schools for weaker children.

The system is defended on economic grounds as an effective means of preserving and improving social and national efficiency. The spirit in which the personal supervision of the child's health in school should be conducted is well expressed in the following:

> The new education is indeed more personal but it is more reverent and gentle than the old. Rudeness will wreck all. The human body is not vile. It is the instrument of instruments. The first condition of success is not that the doctor has degrees, it is that he should not offend one of these little ones. The behavior of children—that is not a thing to judge in the first place. To judge is easy, it has been done for ages, to understand is the new task begun very late. Hasty judgment precludes the possibility of complete understanding. To classify according to health is comparatively easy, it may be done by the three card system. To classify ability and weakness is not so easy. Each child presents his own problems.[8]

The statistics of infectious and contagious disease among school children vary greatly in different places. Infectious ailments like pediculosis (lice) and trachoma (granulation of eyelids) are very common among children of the crowded districts. They are comparably rare in families where children are relatively clean and well cared for. Board of health reports show that cases of measles, diphtheria, scarlet fever, and whooping-cough increase in number from the beginning of the school year in September when the housing-up and segregating process begins, up to March or April, when the children are more of the time out of doors. During the summer vacations the curves indicating the prevalence of contagious diseases are at the lowest. We are driven by such statistics to the conclusion that the school disseminates disease, and is responsible, in part at

[8] McMillan, *op. cit.*

least, for the greater prevalence of contagious diseases of children during the winter months. Extraordinary precautions based upon improving scientific methods will be necessary in order that the school may successfully safeguard the child from disease infection.

Regulations regarding exclusion from schools for infectious and contagious diseases and ailments are not uniform. Quotations from reports of various cities show confusing variety in procedure. The following suggestions are based upon experience in health inspection of school children and upon observation of such practices in the United States and European countries.

It is advisable to exclude from school, pupils who have the following:

1. Small-pox
2. Scarlet fever
3. Diphtheria
4. Tonsilitis
5. Measles
6. Chicken-pox
7. Mumps
8. Acute adenitis (sudden swelling of the glands of the neck, which may be infectious)
9. Whooping-cough
10. Persistent cough (in pupils of kindergarten and primary grades, as this may be early state of whooping-cough, before spasmodic cough develops)
11. Trachoma (granulation of eyelids), if there is discharge from eyes
12. Acute conjuctivitis (this is usually either ["pink eye"] infection of eye, or a symptom of measles)
13. Coryza (running at the nose) in pupils of kindergarten or primary grades, as it is often a symptom of measles
14. Pediculosis, ringworm, scabies (itch), other skin infections (if treatment of these disorders is under supervision of a school nurse exclusion is not necessary)

This aspect of the work of the school nurse is very important, as it permits children with these minor ailments to continue in school.

The following regulations have been used successfully for several years in a large city school:

Each pupil who has been absent from school for three or more consecutive days for any reason must obtain a written permit from the school physician before being readmitted to school.

EXCLUSION FROM SCHOOL

No child will be admitted until after the expiration of the period of infection, as follows:

Diphtheria and membranous croup.—From beginning of throat symptoms

until one week after laboratory culture shows the throat and nose[9] free from diphtheria bacilli. Children who have been exposed to this disease may return to school ten days after date of exposure, or if the disease has broken out in the home, ten full days after change of residence.

Scarlet fever.—From earliest manifestations of illness until desquamation is completed. Not less than six weeks. The period of exclusion will be increased if catarrhal conditions persist. Children exposed to this disease may return to school two weeks from date of exposure, or if the disease has broken out in the home, fifteen days after change of residence.

Measles and German measles (Rubella).—Three weeks from onset of disease, or until catarrhal stage has passed and cough has entirely disappeared. Children exposed to this disease will not be permitted to return to school until ten full days after date of exposure, or if the disease has broken out in the home, ten days after change of residence.

Whooping-cough.—Ten weeks, or until thirty days after the last characteristic coughing spell.

Chicken-pox.—Two weeks, or until desquamation is completed. If the disease has broken out in the home the child may return to school after change of residence.

Mumps.—Exclusion from school until seven days after swelling has entirely disappeared.

Modification of these rules may be desirable for high-school and college students.

In exclusion of pupils from school for contagious disease, wisdom dictates that the child shall stay away longer than is necessary after recovery rather than to endanger his school companions by returning too soon. The benefit of the doubt should be given to the many rather than to the one.

The limitation of contagious disease among children involves many difficult problems. One of these relates to the "bacillus or germ carriers." It is now well established that a person who has had diphtheria, for example, and has made a complete recovery, may carry diphtheria germs in the throat or naso-pharynx for an indefinite period and may, while in good health after convalescence, convey the germs to other people with perhaps resulting diphtheria which may be of the most severe type. Such a person is a germ carrier, and a very dangerous individual to be at large.

It is even possible that a child who has never had diphtheria may

[9] In some cases, cultures from the throat may be negative, while cultures taken from the nasal passages may show presence of diphtheria bacilli.

be a diphtheria germ carrier, and may cause diphtheria in other children. A certain very capable graduate nurse is at the present time a diphtheria carrier, and is debarred from nursing. An apparently healthy pupil or teacher may then be a germ carrier and dangerous to others for this reason. In a Minnesota town recently the new superintendent found that diphtheria had occurred annually for several years. Cultures were taken from throats of all the school children at the beginning of the school year. Eight healthy diphtheria bacillus carriers were found among the pupils. They were excluded from school, received proper attention, and diphtheria was for the time stamped out of that town. It is now known that germ carriers may convey the bacilli of typhoid, diphtheria, tuberculosis, tonsilitis, and perhaps pneumonia and other diseases. "Typhoid Mary" has never had typhoid, but as a domestic servant has conveyed typhoid to other people innocently yet most effectively. Twenty-six cases (with one death) of typhoid have been attributed to this woman. Another woman who had typhoid eighteen years ago has worked in a dairy and as an unconscious typhoid carrier has caused many cases and several epidemics of the disease. It is entirely probable that in the near future teachers and pupils will be examined to detect carriers of disease germs.

In the more efficient detection of incipient cases of contagious disease the school nurse has demonstrated the great value of this one phase of her work. It is practically impossible for the school doctor to inspect all the children each day or each week. The grade teacher is not qualified to note some of the finer indications of beginning disease. The school nurse, with her special training and by daily inspection of all pupils, bridges the gap in inspection between teacher and doctor, and may perform service of almost inestimable value. Dr. Cabot states that—

for ten years in Boston schools, the average number of cases of scarlet fever found each year under inspection of teachers and doctors was 14. In 1908 under inspection of school nurses 1,000 cases were found. That means that the nurses are nearly seventy times as good as the teachers in making the diagnosis of scarlet fever. Under so-called medical inspection (really teachers' inspection) 86 cases of measles was the average number found each year. The school nurses in 1908 found 2,285 cases, or about thirty times as many.

The more comprehensive examination of pupils for chronic weaknesses and defects in addition to detection of acute disease, is coming into vogue slowly. The most significant pronouncement concerning this wider scope of health investigations is contained in the *Memorandum on Medical Inspection of Children in Public Elementary Schools under the English Education Act of 1907.*

> This new legislation aims . . . . at the physical improvement and, as a natural corollary, the mental and moral improvement of coming generations. It is founded on a recognition of the close connection which exists between the physical and mental condition of the children and the whole process of education. It recognizes the importance of a satisfactory environment, physical and educational, and, by bringing into greater prominence the effect of environment upon the personality of the individual child, seeks to secure ultimately for every child, normal or defective, conditions of life compatible with that full and effective development of its organic functions, its special senses, and its mental powers which constitute a true education.

This memorandum also states that the work of medical inspection cannot be properly accomplished unless

> the teacher, the school nurse (where such exists) and the parents or guardians of the child co-operate heartily with the school medical officer.

A recent report from Tasmania shows a sudden development of thorough health examinations resulting from no traditional medical inspection. The work is under the Medical Branch of the Education Department in close co-operation with educational administration. Its object is stated—

> To put children in the most suitable condition for receiving instruction.
>
> Observation and special research show that a considerable percentage of the children in the schools are in such a condition of ill-health that their physical development is vastly more in need of special attention than their intellectual development.[10]

An inquiry concerning health examinations in schools was sent out within a year to all cities (136) in the United States having a population of 30,000 or more. Answers were received from 112 of these: 35 had no regular inspection; 10 had simply medical inspection for contagious diseases; 8 reported experimental and irregular inspections; 17 had periodic examinations for sight and

[10] Burnham, *Pedagogical Seminary*, 1900, p. 92.

hearing only; 42 show evidence of systems of health examinations n varying degrees of development and completeness.

The cities having the best organized systems are: Boston, Chi-:ago, Cleveland, Los Angeles, Milwaukee, New York, and Phila-lelphia.

Examinations in the following thirty-five cities include beyond nspection for contagious disease other items than sight and hearing:

Akron,	Fall River	Memphis	San Antonio
Baltimore	Fitchburg	Newark	Schenectady
Birmingham	Harrisburg	New Orleans	Springfield (Ohio)
Brockton	Hartford	Newton	Superior
Buffalo	Haverhill	Norfolk	Syracuse
Camden	Houston	Paterson	Trenton
Cincinnati	Indianapolis	Portland (Ore.)	Utica
Detroit	Lancaster	Reading	Waterbury.[11]
Elizabeth	Little Rock	Rochester	

Physical defects among school children have been found in varying proportions.

Dr. Hertel, in his well-known investigation of the health of pupils in he better-class schools of Copenhagen before 1885, found that of the boys 11.1 per cent. and of the girls 39.4 per cent. were sickly.

Dr. Francis Warner in the examination of 50,000 school children in London found that 10.8 per cent. of the boys and 8.5 per cent. of girls had abnormal nerve signs; 7.9 per cent. of boys and 6.9 per cent. of girls were mentally dull; 8.8 per cent. of boys and 6.8 per cent. of girls had had some developmental defects. Of the cases with developmental defects, 38.4 per cent. of the boys and 49.9 per cent. of the girls were mentally dull. Of hose who were mentally dull, 57.6 per cent. of the boys and 52.6 per cent. of the girls showed abnormal nerve signs.

Dr. Risely examined the eyes of 2,422 school children in Philadelphia and found that 44.7 per cent. had some deficiency of vision.

Dr. Sexton examined 570 school children in New York City and found hat 13.3 per cent. had deficient hearing in one or both ears. "Of these only one was known by the teacher to be defective, and only ten knew hemselves to be deficient in this sense."

Examinations of 40,000 school children by school physicians in the Duchy of Saxe-Meiningen, Germany, in 1900, showed that 23 per cent.

[11] Some other cities from which reports were not received should, perhaps, be added to this list.

were myopic, 10 per cent. or more had spinal curvature, and 60 per cent. had teeth which needed attention.

Examinations of 900 pupils in the Horace Mann Schools of Teachers College, New York City, during 1902–03 showed that 34 per cent. had myopia, 12.9 per cent. had functional heart disorders, 5.6 per cent. had spinal curvature with some vertebral rotation, 31.2 per cent. more had asymmetry of spine, hips, or shoulders, 14.6 per cent. had adenoids or chronically enlarged tonsils.[28]

STATISTICS OF DEFECTIVE HEARING AMONG SCHOOL CHILDREN

	No. Examined	No. Defective	Percentage
United States	57,072	2,067	3.6
Russia (Zhermunski's report)	2,221	388	17.42
Stuttgart (Weil's report)	5,095	1,528	30.00
Bordeaux (Moure's report)	3,588	616	17.00
Copenhagen (Schieneglow's report)	581	290	50.00
London (Dr. Cheatle's report)	1,000	568	56.8
Edinburgh	567	211	35.24
Aberdeen	600	87	13.00

Moure claims that 500 out of 616 could have been cured of their deafness if properly treated.

The teachers after the tests selected 70 children whom they considered backward; 51 of these children were dull of hearing.

The following table shows the number of defects found in boys of Truant School No. 120, Brooklyn, N. Y.:

No. examined....88	No. cases deformity of extremities 2
No. found defective....77	No. cases defective nasal breathing 17
No. cases anterior glands....62	No. cases bad mentality.... 9
No. cases bad teeth....34	No. cases skin disease....13
No. cases defective vision....48	No. cases cardiac disease.... 3
No. cases hypertrophied tonsils...19	No. cases defective hearing.... 1
No. cases post nasal growth.... 8	No. cases defective palate.... 1

Examinations of school children in Minneapolis in 1908 showed:

	Percentage		Percentage
Malnutrition	23.3	Defective hearing	7.7
Enlarged cervical glands	.53	Defective teeth	43.5
Heart disease	2.1	Enlarged tonsils	31.1
Lung disease	4.2	Adenoids	12.6
Defective vision	23.9	Treatment necessary	65.1

One writer states that in Germany 90 per cent. of all elementary-school children suffer from decayed teeth. Condition of children's

[28] "School Hygiene," *Teachers College Record*, March, 1905.

teeth is not much better, if at all, in this country, and statistics show further that the teeth of country children are as bad as those of city children, while native-born American children show about the same percentage of decayed and neglected teeth as those of foreign birth. A school physician of Ashley, Mass., reports that 95 per cent. of the school pupils have decayed teeth. A school physician at Northampton, Mass., states: "The most deplorable fact from the examination, was the almost total lack of care given children's teeth. Out of 600 children only 74 had received any attention and the larger number of the remaining 526 exhibited most uncleanly and unhealthy mouths." Examination of 572 children of Foxboro, Mass., showed 1,303 teeth which needed to be filled and 334 which required extraction.

SHARE OF THE TEACHER IN HEALTH INSPECTION

In district schools and in schools of small communities which are not visited daily by a doctor, and in large schools where a nurse is not employed, the teacher has the responsibility for detecting at least the signs of acute disease. She should be able to test eyesight and hearing, and it is desirable further that she should note as far as may be possible the indications of important chronic defects.

The following directions are taken from the admirable handbook on *Medical Inspection* issued by the Massachusetts Board of Education.

SOME GENERAL SYMPTOMS OF DISEASE IN CHILDREN WHICH TEACHERS SHOULD NOTICE; AND ON ACCOUNT OF WHICH THE CHILDREN SHOULD BE REFERRED TO THE SCHOOL PHYSICIAN

Emaciation.—This is a manifestation of many chronic diseases, and may point especially to tuberculosis.

Pallor.—Pallor usually indicates anaemia. Pallor in young girls usually means chlorosis—a form of anaemia peculiar to girls at about the age of puberty. It is usually associated with shortness of breath; the general condition otherwise appears good. Pallor may also be a manifestation of disease of the kidneys; this is almost invariably the case if it is associated with puffiness of the face.

Puffiness of the face.—This, especially if it is about the eyes, points to disease of the kidneys; it may, however, merely indicate nasal obstruction.

Shortness of breath.—Shortness of breath usually indicates disease of the heart or lungs. If it is associated with blueness, the trouble is usually

in the heart. If it is associated with cough, the trouble is more likely to be in the lungs.

Swellings in the neck.—These may be due to mumps or enlargement of the glands. The swelling of mumps comes on acutely, and is located just in front of and below the ear. Swollen glands are situated lower in the neck, or about the angle of the jaw. They may come on either acutely or slowly. If acutely, they mean some acute condition in the throat. If slowly, they are most often tubercular. They may also be the result of irritation of the scalp, or of lice in the hair.

General lassitude and other evidences of sickness.—This hardly needs description, but may, of course, mean the presence or onset of any of the acute diseases.

Flushing of the face.—This very often means fever, and on this account should be reported.

Eruptions of any sort.—All eruptions should be called to the attention of the physician. It is especially important to notice eruptions, because they may be the manifestations of some of the contagious diseases. The eruption of scarlet fever is of a bright scarlet color and usually appears first on the neck and chest, spreading thence to the face. There is often a pale ring about the mouth in scarlet fever, which is very characteristic. There is usually a sore throat in connection with the eruption. The eruption of measles is a rose or purplish red, and is in blotches about the size of a pea. It appears first on the face, and is usually associated with running of the nose and eyes. The eruption of chicken-pox appears first as small red pimples, which quickly become small blisters.

A cold in the head, with running eyes.—This should be noticed, because it may indicate the onset of measles.

Irritating discharge from the nose.—A thin, watery nasal discharge, which irritates the nostrils and the upper lip, should always be regarded with suspicion. It may mean nothing more than a cold in the head, but not infrequently indicates diphtheria.

Evidences of sore throat.—Evidences of sore throat, such as swelling of the neck and difficulty in swallowing are of importance. They may mean nothing but tonsilitis, but not infrequently are manifestations of diphtheria or scarlet fever.

Coughs.—It is very important to notice whether children are coughing or not, and what is the character of the cough. In most cases, of course, the cough merely means a simple cold or slight bronchitis. A spasmodic cough, that is, a cough which occurs in paroxysms and is uncontrollable very frequently indicates whooping-cough. A croupy cough, that is, a cough which is harsh and ringing, may indicate the disease, diphtheria. A painful

cough may indicate disease of the lungs, especially pleurisy or pneumonia. A long-continued cough may mean tuberculosis of the lungs.

Vomiting.—Vomiting usually, of course, merely means some digestive upset. It may, however, be the initial symptom of many of the acute diseases, and is therefore of considerable importance.

Frequent requests to go out.—Teachers are too much inclined to think that frequent requests to go out merely indicate restlessness or perversity. They often, however, indicate trouble of some sort, which may be in the bowels, kidneys or bladder; therefore, they should always be reported to the physician.

Eye signs which should be noted by the teacher have been tabulated conveniently thus:

a) All those with "sore eyes"—the name commonly given to chronically or acutely inflamed eyelids.

b) All those with styes.

c) All those whose eyes are congested and "red" where they should be blue-milk-white.

d) All those that squint, either constantly or occasionally.

e) All those that hold their reading-books nearer to the face than one foot.

f) All those that hold their books at arm's length in order to read.

g) All those that cannot read blackboard writing freely from their seats.

h) All those that "peer" like a cat in the sun, or shut their eyelids to a chink.

i) All those that have a drawn, anxious look when reading from map, or blackboard, or wall card.

j) All those that slope the head to read.

k) All those that complain of headaches or show very small pupils at the end of the day.

l) All backward children showing one or more of these symptoms.

m) All that fear the light.

Directions for Testing Eyesight

CONDITIONS FOR TEST

I. Make the test for each pupil singly and in a room apart from the schoolroom if possible.

II. For children too young to read, use the chart with pictures of familiar objects.

ARRANGEMENT OF CHART

III. Hang the Snellen test chart away from windows, in a good light, on a level with the head.

TEST

IV. Place the pupil 20 feet from the chart. Hold a card over one eye firmly against the nose without pressing on the covered eye. Have pupil name letters from the top (larger letters) downward, reading from left to right with one eye and from right to left with the other to avoid reading from memory.

RECORDING

V. The lines on the chart are numbered. At a distance of 20 feet the normal eye should read the letters on the 20-foot line.

Record would be $\frac{20}{20}$ { distance in feet of chart from the eye / number over the line of smallest letters read.

If the smallest letters which can be read are on the 30-foot line, vision will be recorded as $\frac{20}{30}$. If smallest letters which can be read are on the 40-foot line, the record would be $\frac{20}{40}$. If pupils cannot see the largest letters numbered, for instance 100, have him approach slowly until he can read them. If 10 feet is the greatest distance at which largest letters can be read, record would be $\frac{10}{100}$. A mistake of two letters on the 20-foot line and of one on the 30- or 40-foot line may be allowed.

REFERRING PUPILS

VI. If the child has less than normal vision; if the eyes are persistently red and inflamed; if there is pain in eyes or head after reading, notice should be sent to the home that medical attention is needed.

DIRECTIONS FOR TESTING HEARING

THE EXAMINER

I. To insure more uniformity in tests, one person, if possible, should make all the tests in a school. This person should have normal hearing and conduct the tests in such a way that the children have no fear.

PLACE FOR TEST

II. The tests should be made in a quiet room not less than 25 to 30 feet long. The floor should be marked with parallel lines one foot apart.

TEST

III. The test should be made with the whispered voice, which should be heard by the normal ear at 25 feet. The child should repeat what he hears, and the distance at which words can be heard distinctly should be recorded. Each ear should be tested separately with the eyes closed, and the other ear should be tightly closed with the finger during the test.

RECORDING

Hearing may be recorded by a fraction:

$\frac{\text{Numerator}}{\text{Denominator}}$ e.g., $\frac{20}{25}$ { distance in feet at which whisper is distinctly heard / distance at which whisper should be heard by normal ear.

WATCH-TICK TEST

If hearing is defective, it may be tested by a watch-tick and the distance recorded in inches—in same manner—at which watch is heard. The tick in different watches varies, but it should be heard at a distance of 3 to 5 feet.

GROUP TEST

A rough, but sometimes useful whisper test of hearing may be given to a number of children sitting approximately in a row with eyes closed at a distance of 25 feet from the teacher, but the group test will never be so accurate as the individual test.

The teacher with little practice may examine children's teeth.

The teacher also should observe signs indicative of nervous and mental conditions of children:

NERVE SIGNS

a) Restlessness, inability to stand or sit quietly in a child formerly self-controlled; rapid twitching movements of head, face, body, arms, hands, or legs—these are frequently early and slight symptoms of chorea (St. Vitus' Dance).

b) Slower movements and twitchings, sometimes habit spasms which may be due to eye strain, adenoids, or other abnormal conditions.

c) Faintings, or moments when lips turn blue and child seems unconscious of what is going on about him. These may be the lesser seizures of true epilepsy.

d) Irritability, excessive fears, morbidness, crying fits, undue sensitiveness may indicate neurasthenic condition (chronic fatigue).

WORK OF THE SCHOOL NURSE

The well-trained nurse is becoming a most important factor in the care and supervision of health of school children. Her service to child-life and to education has passed beyond the experimental stage.

About one hundred and fifty school nurses are employed in New York City at a salary for each of $75 a month. School nurses are also employed in Boston, Philadelphia, and several other large cities. The functions of the school nurse may briefly be summarized as follows:

1. Daily inspection of pupils in school. With training they may become more expert than the school doctors, even, in the detection of early symptoms of scarlet fever, measles, diphtheria, chicken-pox, and mumps.

2. Treatment of minor injuries and direction of treatment of such conditions as pediculosis, ringworm, scabies, and conjunctivitis (not trachoma)

3. Visitation of homes (outside of school hours) to instruct parents about treatment ordered by the doctor and to give suggestions about matters relating to the home care of child, and home sanitation in general. The nurse may give practical demonstrations of brushing the teeth, treatment of pediculosis, the giving of a bath. The services which the qualified nurse may perform are too extensive and varied to enumerate and impossible to estimate in value.

PHYSICAL DEFECTS IN SCHOOL CHILDREN

The examination of pupils for chronic defects when the child enters school, and annually or biennially afterward, may profitably involve the following items:

1. Age
2. Height
3. Weight
4. Chest measurements (in special cases)
5. Eyes (condition of conjunctiva)
6. Vision
7. Hearing
8. Nose (concerning mouth breathing) and catarrhal nasal discharge
9. Throat (tonsils, adenoids)
10. Teeth
11. Cervical glands
12. Skin
13. Bones (with reference to rickets)
14. Heart
15. Lungs
16. Spine (posture, deviations, shoulder positions, curvature)
17. Abdominal walls (for hernia)
18. Feet (condition of arches)
19. Nervous and mental development (precocious, retarded)
20. Stage of development in adolescence

As part of the investigation of the general health condition of the pupil, information about family, personal health history, and about home habits may be of great value.

Such requests for information will in many cases call attention to factors in the home life of the child which may have an important bearing upon the health of the pupil and upon his school life.

A blank to be filled out by the parents may serve thus as a valuable link between home and school and contribute to more effective co-operation between parents and teachers in the interests of the child, not only in relation to physical but mental and moral welfare. Such a home blank has been used for several years in the Horace Mann School in New York City with excellent results. The blank given below for illustration is similar to the one referred to above, and suggests the details of information which may be found.

HEALTH BLANK TO BE FILLED BY PARENTS

Date .....
Name in full .....
Name and address of parent or guardian.....
.....
Date of birth.....Place of birth.....
How many older brothers?.....Older sisters.....
How many younger brothers?.....Younger sisters.....
Health of child since birth.....
Health of child now: Excellent, good, fair, poor.....
Name diseases or injuries that child has had, and note permanent effects of such upon health.....
.....
What weaknesses or tendencies to ill-health exist?.....
.....
Which of these tendencies are hereditary?.....
.....
Average number of hours in bed.....
Is sleep sound or restless?.....
Is child refreshed and cheerfully ready for the day's tasks?.....
Is appetite good, medium, or poor?.....
What does the child eat for breakfast?.....
Number of hours out of doors daily.....
Favorite out-of-door exercises or games.....
Does child prefer outdoor play, or reading for recreation?.....
Average time for home study, if any.....
Conditions for home study: Artificial light and arrangement, number of people in room, noise and confusion.....
Studies or lessons taken out of school and number of hours a week given to each .....
Habit of bowels.....
Dates of successful vaccinations.....
Date of last attempt at vaccination.....
General remarks .....

Weight is an important indication of the health condition of the child. The pupil should be weighed every year, and in case of acute illness or other health disturbances, at more frequent intervals. If the child is materially below the standard weight for age and height, medical care should be given. If the weight is greatly above the standard, medical care may also be needed.

Weight increases with height and age in normal children. A child who is short in stature for his age is apt to be under weight. This will help to explain how the mean weight of boys sixteen years old and 60 inches high (90 lbs.) is less than the mean weight of boys fifteen years old and 60 inches high (95 lbs.). Similarly, children very tall in relation to age are in some cases lighter than children of the same height but one year younger. The heights and weights of these tables were taken without clothing. Weight of clothing ranges from about 3 pounds in five-year-old children to 6 or 7

RELATIVE WEIGHT AND HEIGHT TABLE—BOYS

The figures represent weight in pounds

Height in inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.	19 Yrs.	20 Yrs.
39	35															
40	38	36														
41	39	39														
42	41	41														
43	42	42	42													
44	46	44	43													
45		46	46	45												
46		48	48	48												
47			49	50	50											
48			54	53	53	53										
49				54	55	55										
50				57	58	58										
51				59	60	60	61									
52					62	62	61	63								
53					62	65	65	67	67	67						
54					65	68	68	70	71	71						
55						69	71	75	75	76						
56						71	77	76	78	79	79					
57							77	79	80	82	82					
58							78	84	85	86	87					
59								84	86	90	91					
60								85	91	94	95	90				
61									98	97	99	96				
62									99	103	106	104	104			
63									100	107	112	112	110	118		
64										114	118	120	117	120	120	
65										122	119	122	122	120	126	125
66											121	125	125	126	129	130
67											128	129	128	131	134	132
68											133	133	130	136	136	136
69												134	136	139	139	139
70												136	140	143	144	145
71													140	146	146	146
72															149	154
73																165

RELATIVE WEIGHT AND HEIGHT TABLE—GIRLS

The figures represent weight in pounds

Height in inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs	11 Yrs	12 Yrs.	13 Yrs	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.	19 Yrs.	20 Yrs.
39	34															
40	37	35														
41	38	37														
42	41	39	39													
43	41	41	42													
44	45	43	44	42												
45		45	45	45												
46		48	47	47												
47			50	49	49											
48				51	51											
49				53	53	54										
50				56	56	57										
51					59	58	60									
52					63	62	62	63								
53						64	63	66	65							
54						69	68	69	68							
55							70	71	73							
56							75	75	76	78						
57								78	80	83						
58								83	86	88	89					
59								88	89	93	97	100				
60								94	94	96	100	104	109	103	99	99
61									99	100	102	109	109	106	105	111
62									104	104	106	111	110	107	111	114
63									.	107	109	116	110	112	113	114.
64										112	118	116	117	114	119	115
65										114	118	121	125	120	123	125

pounds in older pupils, and is slightly greater for boys' than for girls' clothing.

The foregoing tables give in whole number of pounds the weights of boys and girls of different ages and different heights. The method of using the table will be readily apparent, e. g., the mean (corresponding closely to the average) weight of a boy twelve years old and 58 inches tall is 84 pounds.

Possible injurious effects of the more important physical defects of children may be classified as follows:

I. *Defective eyes with imperfect vision*

a) Headache commonly through forehead or back of head, or both.

b) Blurring of sight, but, in hypermetropia with eye strain, vision may be exceptionally good, especially for distant objects.

c) Nausea and dizziness, sometimes disturbances of digestion with resulting malnutrition.

d) Nervous exhaustion with neurasthenia.
e) Nervous irritability and lack of nervous control shown in muscular twitching of face, arms, and legs
f) Mental inability to grasp an idea presented through the eyes.
g) Retardation in school.
h) In rare cases convulsions.

Some medical authorities have attributed epileptic and epileptiform seizures to abnormal eyes.

II. *Defective ears*

a) With catarrh of middle ear—danger of mastoid disease.
b) With deficient hearing, pupil is often dull, careless, listless, inattentive, and mentally backward.
c) Retardation in school.
d) Pupils are often considered mentally defective when the only primary defect is imperfect hearing.

III. *Adenoids*

These are growths of lymphoid tissue (somewhat similar to enlarged tonsils) in the naso-pharynx, up behind the soft palate, and not usually visible on inspection of throat without a laryngoscopic mirror. The causes of adenoid enlargement are not clearly understood. They seem to belong to civilization. Some primitive races are free from them and possibly all.

a) Structural effects.
1. High-arched palate.
2. Narrowing of upper jaw.
3. Deformity of chest, resulting from obstructed and imperfect breathing, shown by lateral depression of front of chest and prominent sternum (breast bone).
4. Disturbed development of teeth and vocal organs.
5. Accompanied by large tonsils in one-third of cases.

b) Functional disturbances.
1. Mental.
(*a*) Disturbances in function of brain resulting in aprosechia nasalis—i. e., difficult for patient to form an idea of anything new; is stupid, has difficulty in retaining ideas, weakness of memory, inability to turn his thought upon a definite subject, lack of power of attention. Guys found among 152 patients with adenoids 62 with decided aprosechia, 32 with slight degree, and 58 with none.
(*b*) Irritability, depression, and often disorderly conduct.

2. Deafness. This is present in a large percentage of all well-marked cases and is due to blocking of Eustachian tubes. Freudenthal found 467 cases of deafness in his 1,000 cases.
3. Defects in sense of smell and taste.
4. Defects in voice (nasal voice).
5. Chronic rhino-pharyngeal catarrh shown by a persistent nasal discharge. This is often one of the first symptoms. In very young it is manifested by snuffles.
6. Obstruction of air passage resulting in breathing disturbances, manifested by open mouth, great restlessness at night, the child being forced to assume various attitudes, i. e., sleeping on face, etc., in order to breathe better.
7. Reflex.
   a) Catarrhal spasm of larynx, or croup.
   b) Headache.
   c) Intractable cough and hoarseness.
   d) Bronchial asthma.
   e) Enuresis (incontinence of urine).

c) General effects.
1. Malnutrition and anaemia.
2. Underdevelopment, physical and mental.
3. Predisposition to otitis media (middle ear disease) laryngitis, colds of a remittent nature; increased susceptibility to disease infections, such as tuberculosis, diphtheria, scarlet fever, etc.

Description of appearance of a child with marked enlargement: mouth open, dull, sleepy, with inquiring look; upper lip short and thick; upper jaw narrowed; nasal orifices small and pinched; the face full under the eyes; listless and indisposed to physical or mental exertion; stupid and backward; in school from one to two years behind the normal pupil of same age; undersized.

IV. *Enlarged tonsils*

The tonsils are believed to have useful function in infancy and early childhood, but normally they decrease in size and almost disappear when the child is from five to seven years of age.

Enlarged tonsils produce many of the unfavorable results attributed to adenoids. The two conditions are often associated and it is difficult to distinguish between their effects. Enlarged tonsils produce susceptibility to

a) Tonsilitis.
b) Quinsy.

c) Diphtheria.
d) Rheumatism.
e) Tuberculosis.
f) Pneumonia, and perhaps other forms of infection.

The presence of enlarged tonsils and adenoids in school children should be known and when any disturbances of health can be attributed to them, these structures should be removed. Their absence is an unqualified advantage.

V. *Defective teeth*

"If I were asked to say whether more physical deterioration was produced by alcohol or by defective teeth, I should unhesitatingly say—defective teeth. In some schools as many as 98 per cent. of pupils show defective teeth. From 50 to 75 per cent. of all school children in this country need at this moment dental care."[12]

[12] Osler, *London Lancet*, October 21, 1902.

a) Direct effects:

1. Pain of excruciating type resulting in great loss of time and rest.
2. Foul breath with unsightly and inflamed mouth.
3. Improper mastication of food.
4. Extension of decay in sound teeth.
5. Decay of temporary teeth resulting in unsound and carious permanent teeth.
6. Infection of glands.
7. Infection of maxillary (jaw) bone.
8. Earache with otitis-media (middle ear disease) and deafness.
9. Headache.
10. Disturbance in function of eye.
11. Frequent digestive disturbance.

b) Indirect effects.

1. Condition of poor nutrition and less resistance to disease.
2. Carious teeth form an almost perfect culture bed for growth of pathogenic bacteria. This fact with lowered resistance leads to increased frequence of infection with pneumonia, diphtheria, etc.
3. Results which accompany defective hearing.
4. Lowering of vitality and temporary or permanent ill health.

There are twenty dental clinics in New York City where teeth are extracted or filled either free or at a very moderate charge, but this number is entirely inadequate to the needs of the population.

VI. *The condition of the skin* is an important indication of the general tone and health condition of the body.

VII. *Rickets* produces softening of the bones with different degrees of deformity, and indicates malnutrition which may injure other tissues of the body including the brain.

VIII. *Abnormal conditions of the heart,* even if temporary, may disturb health and if neglected may result in permanent weakness of the heart itself or of the body in general. The condition of the heart is always an important index of the health condition and is often a valuable guide in adjusting amount of sleep, arrangement of school programme, and selection of muscular exercise which is most suitable for the pupil.

IX. *The lungs* are important as a favorable location of tuberculous disease. Lung tuberculosis is more common among school children than has commonly been supposed. In pupils who are under weight, anaemic, lacking in vitality, even if not coughing, the lungs should be carefully watched.

X *Deviations of spine,* roundness of shoulders and stooping postures are common among boys and girls especially between ages of eleven and sixteen. Many children outgrow these conditions without special attention, but these asymmetries should be inspected from time to time to prevent as far as possible the more chronic defects in posture, and the occasional cases of genuine scoliosis (curvature of the spine) which begin so insidiously.

XI. *Abdominal hernia* (rupture) involves serious and often dangerous weakness of the abdominal walls. It is important for the welfare of children, in the occasional cases which exist, that the condition should be detected and given appropriate treatment.

XII. *Weak foot arches* may produce:

a) Pain in the instep or sole of the foot, sometimes in the ankles, knee, or hip (discomfort in feet or legs, which may be called growing pains or rheumatic pains, is often due to flat foot). A child in good health does not have growing pains. Persistent "growing pains" should always be investigated and given intelligent care.

b) Disability, of some degree, in walking and standing, with stiff awkward gait as a result of the loss of springiness in the foot, even if discomfort does not diminish inclination to walk. Unhygienic shoes; walking and standing with toes turned out; improper methods in the gymnasium in standing, marching, and

various forms of exercise—all these conditions help to weaken arches and flatten feet. It is important for many reasons that children should be able to stand, walk, and run easily and comfortably. There is a surprising proportion of school children today who have some degree of weakness of the feet, and whose general efficiency is thereby to some extent weakened. Pupils and parents should be instructed regarding hygienic shoes; and the material and methods of gymnastic instruction need some reconstruction for the prevention of flat and weak feet.

XIII. *Phimosis in boys* (curable by circumcision) may cause:

a) Condition which makes cleanliness difficult or impossible, with danger of infection and inflammation, and other disturbances.

b) Hernia and other injuries from straining in voiding urine.

c) Local sensitiveness and irritation, which is one of the most frequent causes of masturbation (self-abuse).

d) Reflex nervous irritation which may result in insomnia, night terrors, nocturnal incontinence of urine, constipation, indigestion, malnutrition, irritability of temper, wandering attention and nervous instability.

e) In rare cases, even chorea (St. Vitus Dance) and hysterical manifestations.

XIV. *Nervous and mental states* in relation to healthful development need constant supervision. Precocity is often more serious from the health standpoint than the same degree of mental slowness. The precocious child should not be pushed in school, but rather held back. On the other hand, really backward children should be carefully studied and curable defects should be promptly corrected.

Recent studies by Ayres[14] indicate that children tend to outgrow certain defects with advancing age (though not so uniformly as to justify neglect of these) and that physical defects are only in moderate proportion of cases the prime cause of retardation in school. It is always important, however, to examine the backward child with scrutinizing care for physical defects which may, to some extent at least, cause retardation.

XV. *The progress of organic as well as mental and moral development* should ever be considered in relation to age; but the pupil should be judged and adjusted on an individual basis, with reference to his present and future welfare so far as may be advisable, independently of age or type.

[14] L. P. Ayres, *Laggards in Our Schools.*

COST OF HEALTH SUPERVISION IN SCHOOLS

The expense of health supervision in the schools varies according to the extent of work done and the compensation given. The annual cost ranges per capita up to $1.50.

The general and thorough health supervision costs much more than the limited medical inspection for contagious disease. There is no recognized standard for payment of medical inspectors. Dr. Osler has said in relation to the work of medical inspection in England: "If we are to have school inspection, let us have good men to do the work and let us pay them well. It will demand a special training and a careful technique." The medical inspectors in England are on the average much better paid than in this country.

No expense of education is more thoroughly justified than the money paid for honest and effective health supervision.

ADMINISTRATION OF HEALTH SUPERVISION

Health inspection has had its beginning, with few exceptions, in the medical inspection for contagious disease, administered by the Board of Health. When the broader work of health examination and care has grown out of this, or up about it, the Board of Health usually has had the doctor and the organization to carry on the work more conveniently and economically than the educational authorities. While the inspection for contagious disease will always remain a vital factor in health inspection in schools and must be controlled or sanctioned by the Board of Health, the large work of health examination and care in schools is primarily and essentially an educational interest and task. It must finally, logically, and inevitably be controlled and directed by the educational authorities, but in cooperation with the local health authorities (so far as control of contagious disease is concerned). The exercise of authority in the schools, in relation to all aspects of health inspection, by the Board of Health is not, and cannot be, satisfactory to the community. Dual control by the Board of Health and Board of Education has proved confusing and ineffective.

The tendency in the future will undoubtedly be to unify in the schools the various health interests under the direction of a supervisor of health, or a director of hygiene and physical education.

LEGAL CONTROL

It is probable that in the near future there will be recognition by the law of the right of the state, in the schools, to re-

quire an accurate knowledge of the health condition of school children.

The right of education further to compel by law, if need be, the correction of important defects, will probably be supported by suitable statute. It is vitally important, however, that every other resource for guarding the physical welfare of children should be utilized before the law is invoked, even if the required treatment for the child suffers at times much delay.

There are many reasons why the control of the home over these basic physical conditions of the child should suffer no more interference than seems absolutely necessary. The sympathetic mutual interest in child health, of home and school, offers the most natural introduction to a closer co-operation between teacher and parent which is greatly to be desired and which may affect favorably not only the physical, but the mental and moral life of the pupil and the home.

It is significant that the Wiesbaden system, even under the paternal and autocratic government of Germany, should have achieved its signal success on the principle of educational suasion and without the assistance of coercive measures.

In the physical care of the child by the state through the providing of free lunches, free spectacles, etc., there is greater danger of pauperizing the home than by provisions made for the intellectual or moral needs. If, however, the home cannot, or will not, provide for the serious physical or health needs of the child, there is convincing support for the argument that society should supply such needs, or compel the home by law to give requisite care, rather than allow the child to suffer damaging neglect, "for a weak or a sickly body is a grievous moral disability in so far as by narrowing the range of contact with life it stunts the character."[15]

The state cannot afford on economic grounds even, to educate a child who is handicapped by removable obstacles or whose personality or character is being distorted in any preventable manner.

Finally, for the efficient care of the health of school children, it seems necessary that superintendents, teachers, and parents, as well as the school doctors and special teachers in this field, should be educated in the essentials of child hygiene.

[15] MacCunn, *The Making of Character*, p. 55.

SCHOOL SANITATION

School sanitation has to do with making the material environment of the school favorable to the pupils' health. The school building should be the most sanitary structure in the community.

In the past, cathedral, town hall, government buildings, public library, building of college or university, have represented in public buildings the civic pride of the community. To as great a degree, if not a greater, the schoolhouse in country or city should be a model of architectural adaptation to use, and of sanitary excellence. This building for the training of the young may be made in any community, by intelligent planning and without unreasonable expense, a structure of genuine beauty and a source of continual safety, comfort, and pleasure.

The studies of the sanitary condition of schoolhouses made in many cities in Europe, and in this country in Boston, Philadelphia, Buffalo, and several other cities, show the existence of some schoolhouses that defy almost all the well-accepted principles of hygiene, and whose use for the purposes of instruction is a disgrace to civilized communities; and they indicate that however good the best schoolhouses in this country may be, a large part of them are unfit for use because of their unsanitary condition. These investigations have been made usually under the direction of competent experts. Among the evils found are insufficient light, lack of ventilation, air vitiated by odors from outhouses, old-style vaults, gases from the heating apparatus, etc., wraps and umbrellas kept in the schoolrooms, old-style furniture too large or too small for the children, seats placed at a plus distance, the arrangement such that the light comes from the right, practically no attempt at cleaning the rooms, dry sweeping, the use of a feather duster to stir up the dust, dirty textbooks, etc.

Intelligent citizens object to a law that requires children to attend school when so often the conditions are such that a child cannot stay in the schoolhouse without danger to health.[1]

The chief considerations in school sanitation relate themselves to a few main essentials: (1) fresh, clean air; (2) sufficient light properly controlled; (3) cleanness; (4) hygienic furniture;

[1] W. H. Burnham, "Health Inspection in the Schools," *Pedagogical Seminary*, Vol. VII.

(5) sanitary condition of materials used by the pupils (to prevent infection); (6) pure water supply; (7) disposal of sewage.

A schoolhouse without an adequate playground is an educational deformity and presents a gross injustice to childhood.

The location of the schoolhouse (with reasonable deference to the geographical center of the community) in anything but the most sanitary and desirable position available is altogether indefensible.

Neglect of anything essential for health in construction, materials, arrangement, and equipment of school building, in relation to the ordinary work of education, and in provision against accidental injuries to life (in fire protection) is a social and civic crime.

GOOD AIR

The importance of fresh, clean air can hardly be over-estimated. Outdoor air is the most valuable tonic known. Of the three life essentials—air, water, food—air is the cheapest and the most neglectfully used. Its very character, its universal diffusion, render it liable to a great range of contaminations. In fact, the different forms and varieties of contamination and vitiation to which air is liable are so subtle and complex that the scientists have not fathomed them all, nor devised forms of apparatus which are capable of measuring some of the important changes which occur. Ventilation is the most important feature in the sanitation of the school.

The evil effects of lack of ventilation are made only too evident by such facts as that the death-rates have been reduced by the introduction of efficient ventilating systems in children's hospitals from 50 to 5 per cent.; in surgical wards of general hospitals from 44 to 13 per cent.; in army hospitals from 23 to 6 per cent.; prison records show reduced death-rates chiefly as a result of effective ventilation, in one case from a yearly average of eighty deaths to one of eight, each period covering the same and a considerable number of years. The annual death-rate among horses in army stables in the German service has been reduced by more roomy quarters and free ventilation from 19 to 1.5 per cent.; and in Boston in time of epidemic the number of horses lost in badly ventilated stables was 5, to 1 in those well ventilated.

A vitiated atmosphere lowers the vitality, increases the susceptibility to, and severity of disease, and decreases the physical working power of the individual; while not producing sudden death, nevertheless, it inevitably shortens life.

One report of the New York Board of Health treating of the primary cause of disease, says "Forty per cent. of all deaths are caused by breathing impure air." Along this same line the Peck Williamson Company's treatise on ventilation quotes Dr. A. N. Bell as follows:

"The depressed state of the organism under the prevailing conditions of badly ventilated schoolrooms not only predisposes to epidemic diseases, but the liability to and the danger of all diseases are intensified, and the vicissitudes of weather, which under favorable circumstances may be encountered with impunity, under these depressing circumstances become dangerous perils; and doubtless much that is attributed to the season of the year supposed to be predisposing to scarlet fever, whooping-cough, diphtheria, and some other common affections of children, is due to the same cause." [2]

A chief educational reform of the future will be the ventilation of schoolrooms, with direct effect upon the intelligence, attention, and learning capacity of the scholars, quite apart from any question of physical health.[3]

Bad air is one predisposing cause of tuberculosis. Some of the census reports show that mortality from tuberculosis among teachers is 20 per cent. greater than the average among those in other occupations. Children are more sensitive than adults to the injurious effects of vitiated air as well as other unhealthful influences.

When air is bad, this is not under any ordinary circumstances due to increase of CO_2 (carbonic acid gas), nor to diminution of oxygen; nor (according to the latest and best authorities) is the injurious quality due to any intrinsic organic poison, exhaled from the lungs of a healthy person. In an occupied room the oxygen is diminished in the air and the carbon dioxide is increased, but before the oxygen decrease is serious, or the carbon dioxide is increased to an injurious degree, other changes make the air unfit for breathing.

Since the carbon dioxide in the air may rise to 4 or 5 per cent. and higher without exercising any harmful effects, we may conclude that the indisposition which results from long confinement in badly ventilated or overcrowded rooms is due, not to the influence of any poisonous constituents of the expired air, but to other circumstances—e. g. higher temperature, higher humidity, gaseous substances coming from the intestine

[2] S. H. Woodbridge.

[3] Saleeby, *Health, Strength and Happiness*, p. 29.

or from an unclean skin, etc. It is assumed of course, that the ventilation is not so bad that carbon dioxide accumulates in too large quantities.[4]

The injurious conditions in "bad air" are:

a) Excessive temperature
b) Unusual humidity (air too moist or too dry)
c) Exhalations and disease germs from unclean clothing and unclean and unhealthy human bodies
d) Overheating of air (injured by being cooked)
e) Dust from floor, blackboards, corners, crevices, moldings, etc. containing in addition to less harmful ingredients, disease germs
f) Products of combustion from artificial light and from imperfect heating appliances
g) Gases, dust, and bacteria from neighborhood (streets, factories, etc.)

a) The best temperature for the schoolroom is 68° Fahrenheit. If the temperature exceeds 70° there is depression of vitality and nervous tone, especially if the humidity is unusually high or low, as is often the case. German school authorities have found by experience that it is advisable to shorten school session or to dismiss pupils in warm weather if the temperature rises above 78–80° F.

There should be a thermometer in every schoolroom, and even if there is thermostat (automatic) control, or supervisory control by janitor or engineer, the teacher should keep a record on a temperature chart arranged for this purpose.

b) While the humidity (percentage of moisture in the air) may be excessive and depressing in warm spring or autumn days, the humidity is often too low, and consequently the air is too dry in cold weather in the schoolroom, where the school is heated by furnace or steam. Favorable humidity is 40–60°. When humidity drops below 30° the excessive dryness of the air becomes a very unsanitary factor producing: (1) drying of the mucous membrane of nose and throat, with production or aggravation of catarrhal tendencies; (2) increase of nervous irritability with restlessness of pupils; (3) more rapid development of fatigue, with diminished working power of pupils.

The humidity of schoolroom air may be controlled by a humidifier which introduces moisture into the dry air most advantageously

[4] Tigerstedt, *Textbook of Human Physiology*, p. 345.

in the main supply flue just after the air has been warmed by passing over the steam pipes. This moisture is supplied best in steam which can be controlled by a humidostat, so that the humidity is maintained automatically within certain prescribed limits.

c) Air when overheated loses some of its health-giving qualities in ways difficult to explain, partly at high temperatures by oxidation, and often gains a disagreeable odor from the burning or charring of fine dust particles. The air should never be heated above 100° Fahrenheit.

d) If the pupils in a schoolroom were healthy and clean and wore clean clothing, most of the disagreeable qualities of school air would be eliminated. Much emphasis should be placed on cleanliness of the schoolroom and of those who occupy it.

e) The inorganic particles in schoolroom dust are not very injurious to health under ordinary conditions, but the bacteria in the air may be deadly. These bacteria, out of doors, may lose power to do harm after a few hours, but in the quiet, darker nooks of a room they may retain disease-producing powers for weeks, months, and even years. It is vitally important that the schoolhouse and schoolroom should be constructed so that it will afford the least possible harbor for germs, and it should permit easy and perfect cleaning. The sharp angles and corners should be replaced by cove ceiling, round wall angles and half-round moldings at junction of floor and walls. The door and window casings should be flat, smooth, and rounded at the corners. The irregular moldings required by unsanitary architectural standards which accumulate dust so perfectly should be altogether lacking.

The floors should be of smooth, well-seasoned, carefully matched boards. The seats and desks and other furniture should be models of simplicity, with smooth surfaces and round angles. The features in school construction which are essential to cleanliness and protection of the atmosphere will not detract from desirable artistic effects. The schoolhouse should be cleaned, but never by dry sweeping or dry dusting. Frequent scrubbing is invaluable. Wet sawdust or oily brooms should be used on the floor for sweeping. Damp or oily cloths should be used for dusting. The vacuum system will in time take the place of other methods of cleaning schools as well as other buildings. In disinfection of rooms where cases of con-

tagious disease have occurred, careful fumigation should not cause neglect of sunning, airing, and thorough cleaning.

f) Where artificial light is required, no other alternative need be considered if electric lights are available. Heating appliances should be so arranged that no products of combustion, even from a stove, may gain access to the air of the schoolroom.

g) The schoolhouse should be so located that the air about it is not endangered by the proximity of any source of contamination. The schoolhouse should never be located on made ground, nor in vicinity of marshes, open drains, or sewers.

The best system of heating large school buildings is the combination of direct and indirect methods. The warmed air passes into the room at a temperature of 70° and supplementary heat when needed is furnished by radiators under the windows. When the building is not in use the direct system maintains sufficient heat in the building.

Ventilation in a large building is maintained by fans. If only one is used the plenum is preferable in order that air may be drawn from a favorable point. When the gravity system for the exhaust flue is maintained, where the exhaust flue carries foul air up by the side of the smoke flue, it is desirable to use the wind pump on the top of the exhaust flue on the roof of the building.

In small school buildings, or the one-room rural school, the stove in the room should never be used unjacketed. By a proper arrangement[8] of a jacketed stove or simple furnace, with the exit flue running up by the side of the smoke flue and capped by a wind pump, the rural school may have as satisfactory a scheme of ventilation and heating as the most elaborate city school. In all schools outdoor air should be admitted through windows or window ventilators when the weather will permit, and when the street is not noisy. When window ventilation is used for any reason it is always better to lower all windows on one side of the room a little at the top, rather than to depend upon a larger opening in one or two windows, which will be more apt to produce troublesome draft.

The light supply and distribution is a matter of great importance

[8] Different arrangements of ventilation for rural schools, utilizing similar principles, are described in the School Board Journal, April, 1908, p. 104 and April, 1909, p. 12.

in school sanitation. South and east are the best directions from which to get light. The schoolrooms should be lighted from the left side of the seated pupils. The windows should extend to the ceiling. The glass area should equal one-fifth of the floor area—more than this if windows are shaded by trees or neighboring buildings. Windows should have two sets of opaque shades which roll from the top and bottom of the windows. The windows should be kept clean.

In color, the ceiling should be a light buff or white. The walls should be light green or grayish green.

Difficulties arise concerning school desks and seats in respect to the demands relating to cost, hygienic requirements, and the specific needs of instruction. Little uniformity has resulted in the United States in the use of hygienic school furniture. The flat-topped movable table desks and light movable chairs have proved satisfactory in some schools for lower grades. The pupil should have separate desks and seats which are adjustable in height and for a minus distance. The school seat which represents the most careful study and judgment regarding school furniture at present is that called the Boston school seat.

Certain precautions within the scope of school sanitation are necessary to protect pupils from conveyance of possible infection from one to another. The common drinking-cup is properly and almost universally tabooed. The extent to which it may convey disease from one person to another is almost beyond belief. The chief avenue by which bacteria enter the body is through the mouth. This is quite at variance with the popular idea that most germs are inhaled into the lungs.

The evidence condemning the use of the common drinking vessel upon any occasion whether at school, church, or home is derived from three sources; (1) the frequent presence of disease-producing bacteria in the mouth; (2) the detection of pathogenic germs on the public cups; and (3) the discovery that where a number of persons drank from a cup previously used by the sick, some of them became ill.

Dr. Forbes of Rochester refers to an epidemic of diphtheria in his city which occurred among twenty-four persons and which was traced unmistakably to a common drinking-cup which all the sick had used.

The mortality statistics of the census bureau show that diphtheria, meningitis, bronchitis, tuberculosis, pneumonia, and grippe, all of which are

likely to be acquired by the use of the common cup, are responsible for nearly 400,000 deaths annually in the United States.

The introduction of bacilli into the body through the uninjured wall of the digestive tract, anywhere from the mouth downward, is the chief mode of infection with tuberculosis.[6]

The common drinking-cup should never be used in school, at home, or elsewhere. The drinking-fountain for schools is thoroughly sanitary and the best arrangement where there is running water. The system of individual drinking-cups is satisfactory when the cups are kept in a proper cupboard, covered to protect them from the dust, and under the supervision of the teacher. Individual drinking-cups should never be kept in desks of pupils.

The common towel should never be used. The best solution of the towel problem comes in the cheap, tough paper towels which are destroyed after being used once.

Pens, pencils, and books should be used as individual school property. The slate is not to be tolerated. Books should be disinfected before they go into the possession of another pupil. Molding clay should not be used by a second pupil in the lower grades. It cannot be disinfected and used again. The following lists embody important and practical suggestions regarding hygienic and sanitary habits for school children:

HEALTH "DON'TS" FOR SCHOOL USE[7]

Don't pick the nose; always carry a handkerchief.

Don't wet the fingers with saliva in turning the leaves of a book.

Don't put pencils in the mouth or moisten the point with the lips. Keep the point well sharpened.

Don't wipe pens in the hair.

Don't put pens in the mouth.

Don't put anything in the mouth except food and drink.

Don't "swap" candy, gum, whistles, or anything that is intended for the mouth.

Don't kiss upon the lips; kiss the forehead or cheek.

Don't allow the finger nails to become long or unclean; or neglect the teeth.

Don't face toward another person when coughing or sneezing.

[6] Davidson, *Death in School Drinking-Cups.*

[7] *American School Board Journal,* May, 1908.

SIX HEALTH RULES[8]

1. Fresh air and sunshine are necessary to good health.

2. Night air is as good as day air, and in cities where there is much dust, better.

3. Eat little fried food, pastry, cake, candy, and sugar.

4. Wash your hands before you eat.

5. Never lick your fingers when turning pages or counting money.

6. Avoid spitting, because it spreads consumption and other diseases.

In country districts where there is a local water supply for school use, great care should be exercised to make sure that it comes from a pure source. In districts where there is no water-carriage system for sewage the problem of arrangement for school toilets requires special attention. The privy vault should never be allowed on school grounds, even in remote rural districts. The water-tight, cemented cesspool, even, is not wholly defensible at the present day.

In small (one-room) rural schools the dry earth closets will satisfy sanitary requirements, but they need intelligent care and should always be located at least forty to fifty feet from the schoolhouse.

It is desirable that the toilets should be under the schoolhouse roof, and this may be accomplished in rural or small village schools where there is running water, by the use of the septic tank for sewage disposal.

[8] *American School Board Journal*, June, 1908 (Board of Education, Wilkes Barre, Pa.).

HYGIENE OF INSTRUCTION

Modern education attempts to give the pupil cultural training in preparation for citizenship, and for social and industrial efficiency. Characterized at different times by these and other guiding motives, the work of the schools has gone on through the ages. During more recent times spasmodic attempts have been made to so arrange this school process that it would not, while attempting to accomplish its ambitious and worthy purposes, be harmful to the biologic values which the pupil represents. The hygiene of instruction considers the effects of the educational process itself upon the health of the individual, and would so control and adjust the various factors which collectively make up school work that the pupil's health will not be injured while he is being prepared for future usefulness. That the process of education is always carried on without danger to the pupils' health, even the school men themselves sometimes doubt.

At a recent conference in New York City on the physical welfare of school children, a school principal declared that our present curriculum is manufacturing more physical defects every year than school physicians and school nurses can correct. To the surprise of the laymen present, the school men were of one mind as to the havoc wrought by school life upon the physical and mental energy of the child. We were told that eyes are weakened, if not ruined, by glazed paper, small type, lines of wrong length, unsteady or dazzling light, or prolonged concentration. Dry sweeping fills the air with dust, and combines with bad ventilation, lack of water, and dust-raising physical exercises, to supply conditions that favor the growth of disease germs, more particularly the tubercle bacilli. Seats and desks deform the spine and hips, and cramp the lungs. Required home-study deprives the child of play and sleep and accentuates the effects of harmful school environment. Highly trained teachers explain the composition of air in an atmosphere often more poisonous than that of the average city sweatshop. Boys and girls unable to breathe through the nose because of adenoids and enlarged tonsils are deprived of recess for not being able to describe the passage that leads from the nose to the windpipe and lungs. Children fortunate enough to be physically able to meet school requirements are handicapped in their studies, and for that reason reduced in industrial

efficiency, because they must march side by side with children suffering from removable physical defects.[1]

In the past, education has been treated largely as the process of teaching various subjects to children. It was deemed essential that the teachers should know a great deal about the subjects which they were to teach and something about child-psychology. With the evolution of education and the theory related to it, more importance is being attached to the knowledge and supervision of the child-organism. It seems probable that in the near future, as much relative attention will be given, in the training of teachers, to the study of the nature and character, physical, intellectual, and moral, of the child as to the study of his environment and its details, by reaction to which he will be educated.

The understanding of child-life which is necessary to enable the teacher to judge the effect of schooling upon the pupil, must include not only knowledge of child-psychology, but also of child-biology and child-physiology.

First we must know what man is, for man is the far-off goal of all our pupils' development. Then we must discover how a baby grows into manhood, and just what Nature would have us do for him at every age and stage. Only when we have discovered the characteristics of every stage of childhood can we attempt to form a system of education, suited at every stage to gain the co-operation of Nature and thus train men and women of growth and balance, of health and vigor, power and efficiency.

The balance of organs in the child's body, in other words, his constitution in the literal derivative sense, is quite different at different epochs. The great mental changes during youth and early manhood are familiar to us all. The physical changes during childhood and early youth are equally great, but often pass unnoticed or poorly understood. Yet these changes modify or cause certain traits in the child.[2]

The training which the child is to get should be what is essentially designed for him in his unripe condition, for it cannot be similar to that of an adult. The child is the immature animal; so far different from its fully grown model as almost to want the name of "different creature."[3]

[1] W. H. Allen, "Broader Motive for School Hygiene," *Atlantic Monthly*, Vol. CI, 1908.

[2] Tyler, *Growth and Education.*

[3] Oppenheim, *Development of the Child.*

As educators have come to realize how different the child is from the adult—different not alone in size, but in structure and function, in relative proportions, in balance of organs, in constitution, in power of endurance, in fact, in every element which is concerned in the making-up of the final stage of maturity—it has become evident that this knowledge must be fundamental in judging what will be best for the child.

Consideration of the manifold and often subtle organic changes in the comparative development of childhood would be too long and technical a task at this time, but careful study of this relatively new and important phase of child-study will well repay any teacher who wishes to deal fairly and justly with the children who are being trained.

Without attempting any complete survey of the many difficult and intricate phases of this important field, brief reference may be made to some of the fundamental elements of the problem.

I. The pupil should present himself at school in the morning in the best possible condition to profit by the process of instruction. Two factors of daily living are prominently related to the pupil's condition and therefore are of direct importance to the school.

HOURS OF SLEEP REQUIRED AND MENTAL WORK PERMISSIBLE FOR CHILDREN OF DIFFERENT AGES

Age	Hours of Sleep	Time in Bed	Hours of Schoolroom and Other Mental Work
5– 6.....	13	6 P. M. to 7 A. M.	3
6– 8.....	12	7 P. M. to 7 A. M.	3½
8–10.....	11½	7:30 P. M. to 7 A. M.	4
10–12.....	11	8 P. M. to 7 A. M.	4½
12–14.....	10½	8:30 P. M. to 7 A. M.	5 to 5½
14–16.....	10	9 P. M. to 7 A. M.	6
16–18.....	9½	9:30 P. M. to 7 A. M.	7
18–20.....	9	10 P. M. to 7 A. M.	8

a) Rest and sleep after the previous day's activity. If the night's rest has not been sufficient to restore the organism completely after the exertions of the previous day, the child begins the day partly tired out, with crumpled or haggard nerve cells, quite unfit for normal, satisfactory responses to stimuli. If the child continues in this partially tired-out morning condition, there is a condition of chronic nervous exhaustion of some degree at least, and this will

prevent good school work, while it renders the child more susceptible to disease and may seriously interfere with physical, mental, and even moral growth and development. Many school children do not spend enough hours out of each twenty-four in bed in a room which is as widely open to the outdoor air as wide open windows will permit.

Nothing can make good to the individual the loss entailed by deficient sleep during childhood.

b) The child as a preparation for the day's programme in school, should eat an unhurried, nutritious breakfast, and get to school on time, without rushing. The child machine must be properly coaled up before beginning the work of the day. If the pupil does not sleep well, and does not eat a good breakfast, these faults should be corrected.

II. The school programme should be arranged for the class and adapted so far as necessary to the individual pupil with reference to genuine fatigue, which means quite normally a lessening of working power as the day proceeds. Fatigue resulting from a reasonable day's activity disappears after a sufficient night's rest.

Abnormal fatigue, or what Dr. Cowles has significantly called "pathological fatigue" may be due to many things. Overwork is commonly supposed to be one of them. It may be said, however, that in children this is not very frequently the case. Results usually attributed to "studying too hard" are owing very directly to something else. Much more frequently, dangerous fatigue is the result of unhealthy confinement within doors, or is owing to unwholesome shocks and puzzlings, and confusions, and conflicts of impulses resulting from the imposition of scatter-brain notions of teaching and discipline—imposed much too fast for the child to grow to, or even to comprehend.

Children who, through heredity or accidental stress, are unusually liable to pathological fatigue, should have special provisions made for their especial educational needs. Every large school should have the services of an expert teacher who has been technically trained for this particular work.[4]

To sum up: Fatigue in the schoolroom may be largely decreased, if not reduced to the minimum, by more frequent use of rest periods; by arranging stronger contrasts in the daily programme, as well as securing a wiser adjustment of difficult subjects to the best working hour; by patient and

[4] Smith Baker, "Fatigue in School Children," *Educational Review*, January, 1898.

wise training of pupils into better habits of study; by a better utilization of the doctrine of interest; by lessening nervous tension in the schoolroom; and by wise use of play under supervision.

There is a vital distinction between fatigue (*Ermüdung*) and weariness (*Müdigkeit*). A child at play may become fatigued, but never weary of his activity; a boy engaged at work in which he takes no interest may become so weary in fifteen minutes that he can accomplish nothing. . . . . Tediousness produces the feeling of weariness which is distinctly different from fatigue itself.[5]

It should be remembered, however, that a feeling of weariness may quite normally come on with increasing fatigue, though the former is by no means a constant and accurate index of the latter.

Ribot says: "Fatigue in every shape is fatal to memory." Every teacher, therefore, should be familiar with the indication of fatigue, with the conditions which most rapidly induce it, and with the means that may be employed to avoid, to reduce, or to overcome it, so that the maximum of effort may be attained by the minimum expenditure of energy.

Our psychologists tell us that with the normal pupil mental fatigue in school work is quickly induced and also quickly passes away. Mental efficiency, or the increments of skill gained through mental training, is much more permanent in its character and is not soon lost. If this be true, in order to attain the highest possible maximum mental efficiency, with the greatest economy of effort, provide working periods with more frequent rest periods, and thus secure through this power of the mind to recuperate rapidly, an almost continuous high state of mental vigor. . . . . The mind, instead of being as we supposed like an old-fashioned sensitized plate of the photographer, which required a long exposure, is, after all, more like the highly sensitive plate of the snapshot camera. . . . . We need, especially in the lower grades, to bring in these more frequent rest or exercise periods, believing that the increments of power gained from mental activity will not be dissipated through such slight interruptions, and that efficiency of public school work will be greatly increased as well as relieved of much of its present drudgery.[5]

III. The eyes of school children should be protected from excessive strain, especially in the lower grades, by every possible means which ingenuity and forethought may devise. Abnormalities of

[5] H. E. Kratz, "How May Fatigue in the Schoolroom Be Reduced to a Minimum?" *Proceedings of the National Education Association* (1899), p. 1090.

the eyes which are either partially caused or aggravated by school work increase from the lower to the upper grades.

Indeed, extensive examinations of eyes of school children, in addition to showing the small proportion of normal eyes, have shown that a very large proportion present an unhealthy appearance, or even the beginning of disease of the deeper, more important structure of the eye. The least trouble was found in the lower grades, markedly increasing toward the higher, as did also the average degree of error, proving unquestionably the effect of the educational systems on the eye.[7]

Proper care of eyes in school work necessitates: (*a*) very little fine work for young children; (*b*) books with large, distinct letters and figures printed on unglazed paper; (*c*) use of large characters on clean blackboards; (*d*) use by pupils of coarse writing pens or soft pencils (slates should never be tolerated).

IV. Recess and frequent short intervals of rest and relaxation between periods should be preserved in the arrangement of the school programme at whatever cost of convenience, or difficulty of supervision.

Kraepelin, Friedrich, and others have observed that pupils work best when school sessions are interspersed with short periods of rest.[8]

School instruction is for the mentally and physically growing child *work*, and consumes his mental energy. If it becomes overwork, it checks his mental and physical development. It is shown by these and other experiments, and insisted on by many educators, that short intensive study hours are better than long ones. Especially with children in the lower grades, fatigue increases very rapidly with the continuation of instruction. The child should be granted a recess of from eight to fifteen minutes after every sixty minutes, the time to be spent in attention to bodily needs, to rest, and to the taking of nourishment. The severer studies should find a place in the earlier morning hours. Whether there should be any afternoon session at all is questionable. At any rate, only light exercises, such as penmanship, singing, etc., should be permitted in the afternoon.[9]

It should be remembered that formal gymnastics rank with mathematics among the most rapidly fatiguing of all forms of instruction.

[7] S. T. Easton, "Public Schools and Eyesight," *Education*, February, 1901.

[8] O'Shea, *Dynamic Factors in Education*, p. 284.

[9] Patrick, *Studies in Psychology*, Vol. I, p. 80.

V. The school schedule should not require formal or artificial tests and examinations which seriously disturb the nervous state or health of the pupil, either at the time of the test, or by a period of abnormal nervous tension during preparation for such tests.

There is another habit of our school which I have frequently had occasion to deprecate. I allude to the system of term examinations in vogue in many schools for the purpose of determining the class standing of the pupils. The procedure calls into play in a most extraordinary manner the ambition of the pupils, for the reason that their promotion is contingent upon their ability to pass it successfully. For weeks before the expected trial the hours of work are prolonged, the rest interfered with, the child becomes nervous and irritable, and the tone of health impaired. The eyes often suffer seriously under the baneful influence of this prolonged strain. I have very many times been annoyed and disappointed over almost sudden relapse of choroidal disease, in patients under observation, often with an increase of near-sight indicating a distention of the eyeball, brought about by the stress of work required in preparation for the examination at the close of the school year.[20]

VI. Promotions by subjects with a relatively loose classification of students in grades or classes are much more favorable to the health of pupils than the traditional promotion of an entire class at the end of the year or half-year. This is particularly important for girls in the upper-grammar and high-school grades, when the promotion tests are more severe and "caste feeling" as related to standing in class, and promotion with class, is very pronounced. While it often happens that the desire to keep up with the class may serve as a useful incentive to do good work, still it frequently operates disadvantageously to the individual pupil. Not infrequently the high-school girl, whose health at puberty demands a partial programme, sometimes at menstruation several days' absence, or perhaps the dropping out of school for a year, suffers such chagrin and unhappiness that parents and teachers allow her to struggle along, even though she may suffer serious and permanent injury. Educational organization should be elastic enough to provide for the needs of individuals—within reasonable limits—as well as for the training of typical groups.

In fact the normal child should not be the primary consideration of any

[20] S. D. Risley, "Defective Vision in School Children," *Educational Review*, April, 1892.

system of promotion. The non-normal child, who belongs to the majority, or at least to a large proportion, is crying for recognition. He must be given the opportunity to travel his own pace. Even the normal child of one year is not necessarily the normal child of another year. The conditions which produce retardation or advancement are several, and these may vary. The child's own growth rhythms, for example, may put him in a condition to do normal work one year, and less or more than normal work another year.[11]

VII. The teacher is the most important factor in relation to the hygiene of instruction.

a) Higher standards of health must be demanded of the teacher if she or he is to exert an influence upon the sensitive, plastic child which is salutary and altogether wholesome.

b) The teacher must be protected from overpressure and chronic fatigue through: (1) personal rational habits of living; (2) limitation by school authorities of the teacher's duties so that health preservation is possible.

Various aspects of the hygiene of instruction have been suggestively summed up in the conclusion of two writers:

1. The mental effort of which the child is capable is primarily connected with physical activity and with sense perceptions.

2. The physical activity most needed by developing childhood is not found in formal and artificial systems of exercise, but in plays and games, in the various occupation imitations of childhood, in gymnastic games, and in the progressively difficult demands of well-directed manual training. These present mental as well as physical problems, fully adapted to the child's stages of development, and insure adequate mental and physical growth up to the age of eight or ten.

3. The conditions favorable to the mental development of a child seven years of age are not found in arithmetical processes, but in concrete number relations; not in the science of language, but in its use; not in the use of symbols, as in reading, nor in the efforts at fine motor co-ordinations, as in writing with pen or pencil, but in drawing and picture writing on the blackboard (in games and industrial training) and in the fascinating study of plants and animals.

4. The wholesome development of the child's nervous system depends upon maintaining his interest in school work, fostering and directing his spirit of inquiry, and satisfying his love and need of activity. Substitution

[11] Burk, "Promotion of Bright and Slow Children," *Educational Review*, March, 1900.

and suggestion must take the place of prohibition and repression. The true discipline is the self-control of interest.

5. The teacher must not be misled into demanding logical sequence of continuity from the child. Superficiality is both the safeguard and the stimulus of childhood.

6. Not less than one-half of the school time of the primary-school pupils should be devoted to physical activity in its various aspects, and the remaining time should be devoted largely to nature-work, drawing, oral descriptions, and oral reproductions.

7. The child's increase of mental power is not in proportion to the mental effort he is forced to make, but is largely determined by natural physical growth.

8. The final test of primary-school work must be—is it joyous? does it give full scope to the play impulse?[18]

The physical organism, regarded from one standpoint, is a contrivance for generating energy needed for the support of all activity, whether physical or mental. When the stock of available energy in the organism at any time is depleted beyond a given point then serious disturbances must ensue. In a fatigued condition one cannot accomplish as much ordinarily as when he is refreshed. His perception, his memory, his reason, are rendered less keen and ready and accurate; his endurance in labor of any sort is lessened; he cannot perform tasks demanding the finest and most exact motor co-ordinations. Some pupils will become unduly tense in all their actions, while others will grow lethargic and indifferent. Restlessness and irritability will take possession of a schoolroom under such conditions.

If one is to attain the greatest efficiency, he must use his energy economically; he must avoid all practices that squander his resources. Needless motor tensions drain off the vital forces without accomplishing anything, and they must be reduced to the minimum. And first of all by changing the state of mind which begets them. Worry, fear, self-consciousness, over-scrupulousness, dissipate energy. Teachers especially need to bathe their spirits freely in the best books, the best art, the best music, and the best social life. They should keep an eye on their pupils, too, and seek to encourage in them habitual attitudes of courage and hope and joyfulness. It should be the aim to do one's work without wasteful muscular tensions. Usually tasks requiring very fine adjustments entail waste, and they should not be undertaken when unnecessary. It is the teacher's duty to banish from the schoolroom all implements, in the management of which there is demanded precise co-ordination, where coarser activities would

[18] Fitz, "Hygiene of Instruction," *Proceedings of the National Education Association* (1898), p. 545.

answer just as well. Very fine writing, or sewing or weaving and the like should be abolished. All the equipments of the school, especially the seats, must be chosen with the end in view to reduce to the lowest point the waste of nervous energy in pupils. Finally, well-poised, calm-voiced, and calm-featured teachers, who are at the same time positive and definite and, in short, *strong*, are the most important pieces of apparatus that can be placed in any schoolroom, regarded from the standpoint of the conservation of the nervous energy of pupils.

In arranging the daily programme it should be the aim to have pupils give concentrated attention for brief periods only to the work in hand. One hour of real hard work is worth three of mind-wandering, and it is far more conservative of vital forces. Some account should be taken of the "course of power" in the day, and an effort should be made to get all school work done while the energies are at flood tide. Especial pains should be taken to so arrange the programme that it will not be necessary to hold pupils to their tasks when the waning of their powers leads to relaxed attention, so that they fall into frequent errors, and thus put themselves into an unhappy relation toward their environment.[13]

[13] M. V. O'Shea, *Dynamic Factors in Education* (1906), p. 297.

HEALTH INSTRUCTION

This is one of the most perplexing problems in education today. No phase of instruction seems more important than to teach the child how to live in a healthful manner. No subject is taught, on the whole, so unsuccessfully. In considering the traditional and present methods of teaching physiology and hygiene, several purposes appear to have exercised varying degrees of control over such teaching. These purposes may be classified thus:

a) To teach these subjects—physiology and hygiene—as branches of science, with observance of methods employed in other branches of science and with applications of this knowledge to hygiene when such applications appear to be feasible. The teacher possessing this as the main motive, has ordinarily had more training in pure science than in hygiene, and the teaching shows corresponding distribution of emphasis.

b) To give instruction in facts and principles of hygiene on a basis of as much anatomy and physiology as seems necessary to support the hygiene teaching. This kind of teaching is often as theoretical on the hygienic side as would be given with the first-named purpose, and frequently the scientific basis is inaccurate and generally defective.

c) To provide the temperance instruction required by law in the various states and to supplement such instruction with the additional material contained in the required textbooks. This represents the prevailing motive and method in the teaching of physiology and hygiene in the schools of the country. The teaching is done in obedience to law, often in a perfunctory manner, without much interest on the part either of teacher or pupil and with very little apparent after-benefit, so far as one may judge from the impressions recalled in after years by those who received this type of instruction.

Now, nothing can be more readily shown than that in the case of most individuals the knowledge of the ill effects of unhygienic activities does not in itself result in the formation of hygienic habits. . . . . We eat welsh rarebit and pumpkin pie, in spite of nightmare and nervous indigestion. It

takes something more than physiology—more than toothache itself—to make children use a tooth-brush after every meal. And just as certainly, boys who do not stand aghast at the abasement and the menace of the drunkard, will not be prevented from drinking solely through knowledge of the various ill effects of alcohol on the heart and nervous system.[1]

An investigation of the methods and effects of the conventional teaching of temperance, physiology, and hygiene in public schools, which was conducted by a special committee of the New York State Science Teachers Association showed that in a moderate number of schools where the instruction was given in an earnest fashion by teachers who were alive to the reasonable possibilities, some satisfactory results were obtained.

d) To inculcate in pupils habits of healthful living in relation to personal, home and community life, through the study of sanitation, bacteriology, simple facts of hygiene, and by encouragement of wholesome play, athletic ideals, a spirit of reasonable personal ambition, and social helpfulness. This method and approach have been utilized all too rarely, but have when used been productive of splendid results.

On the whole and up to the present time, the teaching of hygiene in the schools has been inadequate and unsuccessful. The following reasons are proposed to explain in part this lack of success:

1. The teachers generally lack conviction regarding the value of the instruction as ordinarily given and, partly in consequence of this, have little if any interest in such teaching. There is abundant reason for this lack of conviction and interest as the methods of teaching are felt to be faulty and the effects insufficient to justify the time and effort given to the subject.

2. The teachers are too frequently wanting in the practical personal standards and habits of individual hygienic living which are essential as the primary elements to give authority and power to such teaching with reference to its applications. The effective teacher of this subject must give expression in personality and conduct to the principles of hygiene which are being taught.

3. The teachers in the majority of instances do not possess the information, the scientific and practical knowledge needed for the

[1] Yocum, "Teaching of Hygiene in Elementary Schools," *American School Board Journal*, November, 1908.

clear presentation of material which should be wisely selected and adapted to the needs of the pupil at the time.

4. Teachers give as one reason for neglecting hygiene, that they are often compelled to struggle with a curriculum, which requires more than they are able to teach and more than pupils are able to learn in the time allowed. While an overcharged curriculum may explain, it surely does not justify, the violation of law and the dropping of hygiene from our school curriculum. If there is any class of citizen who should teach and practice respect for law as law, it is the teacher. Parents, school directors, county and state superintendents, university presidents, social workers, owe it not only to themselves, but to the American school teacher, either to repeal the laws that enjoin instruction in hygiene or else so to adjust the curriculum that teachers can comply with those laws. The present situation that discredits both law and hygiene is most demoralizing to teacher, pupil, and community. Many of us might admire the man teacher who frankly says he never explains the evils of cigarettes because he himself is an inveterate smoker of cigarettes. But what must we think of the school system that shifts to such a man the right and the responsibility of deciding whether or not to explain to underfed and overstimulated children of the slums the truth regarding cigarettes? If practice and precept must be consistent, shall the man be removed, shall he change his habits, shall the law regarding instruction in hygiene be changed, or shall other provision be made for bringing child and essential facts together in a way that will not dull the child's receptivity?

Teachers are made to feel that while arithmetic and reading are essential, hygiene is not essential. Whatever may be the facts regarding the relative value of arithmetic and hygiene, whether or not our state legislators have made a mistake in declaring hygiene to be essential, are questions altogether too important for child and state to be left to the discretion of the individual teacher or superintendent. It is fair to the teachers who say they cannot afford to turn aside from the three R's to teach hygiene, to admit that they have not hitherto identified the teaching of hygiene with the promotion of the physical welfare of children. Teachers awake to the opportunity will sacrifice not only arithmetic but any other subject for the sake of promoting children's health. They do not really believe that arithmetic is more important than health. What they mean to say is that hygiene, as taught by them, has not heretofore had an appreciable effect upon their pupils' health.[2]

5. The present teaching of physiology and hygiene involves too many facts of anatomy and physiology. It is doubtful whether any teaching of anatomy and physiology as such is advisable in ele-

[2] W. H. Allen, *Civics and Health*, p. 4.

mentary or grammar grades, and very little if any is needed in the high school. Not until the student is of college age, at least, is the study of human anatomy and physiology beneficial to the individual, except in the presentation of very general facts and principles relating to the body's construction and function which may strengthen the argument in support of hygienic living. That is, the claim here is made that nowhere in the school should these subjects be taught systematically as branches of science. Much of the material of instruction in physiology and hygiene is uninteresting, difficult, and beyond the clear comprehension of the pupil. One author of an elementary-school textbook very frankly entitles his first chapter "Dry Bones." Educators know that hygiene is required by law. They assume that it is an important subject and that the child must know the anatomy and physiology to understand the hygiene. And the children try to memorize dry details of physiology and to understand facts and principles which are too complex for them. The most absurd and ludicrous records of school tests are made up by the ridiculous, grotesque, not to say inaccurate answers to questions in human anatomy and physiology. And the same types of answers result from all kinds of teaching, indicating that something is inherently wrong in the materials and methods of teaching. Much of the description in textbooks is beyond them, and many of the illustrative cuts are not understood. In addition to the foregoing, the direction of the pupil's attention to the structure and function of his own body results often in disturbed self-consciousness; is pedagogically unsound; and contributes little to hygiene teaching. On the contrary, it may directly interfere with the desired hygienic application and antagonize the pupil in relation to the whole subject. The psychology of physiology teaching has not yet been worked out in any satisfactory fashion.

6. The instruction in this branch of education is too largely theoretical, too little related to, and judged by, the conduct of the pupils. The tendency now throughout the schools is to value mere information less and to esteem more highly useful reactions and habits. In this field most of all, unless it be in the moral field which it is impossible and undesirable to separate from the broadly hygienic, it is fundamentally important to judge results of hygiene

teaching by the practical application in actual and immediate living.

7. Too much emphasis in hygiene is directed to the personal health of the pupil, too little to the health and well-being of members of the home and of the community. The child is not interested in his own health, nor should he be except as he realizes in a rather vague way that "to be well and strong" enables him to do things that seem worth while, to help the members of the household, the teacher and other friends, to be useful generally. Actual answers to questions concerning health obtained recently in different elementary grades indicate the direction of pupils' interests. In the first four grades the following questions elicited the answers quoted:

a) *What does it mean to feel well?* The word happy was used in nearly all of the answers. These answers were given: "glad"; "feel like doing things"; "nice"; "not cross"; "laughing all the time"; "running and jumping."

b) *Why do you wish to feel well?* Nearly all said: "So I can play and go to school."

c) *How can you become big and strong?* "Bathe"; "Eat good food"; "Drink milk"; "Climb a lot"; "Mind Doctor (school physician) and Miss (gymnasium teacher)."

d) *How can you help others grow big and strong?* "Take the baby to the Park every day"; "Make your small children to wear rubbers when it rains"; "Don't let your father smoke in the kitchen." One little first-grade girl with a strong instinct for self-preservation, said: "I wouldn't help other people, I might catch it myself."

In the fifth grade the following questions were asked: (*a*) What does health mean to you? (*b*) Why do you want to be well? (*c*) How can you become well and strong? (*d*) Name the persons who help you most in keeping well and strong.

Nineteen papers were collected. The idea of "feeling well," "happy," "strong," "bright," "lively," "not sick," was expressed fourteen times in connection with the first question. One child said, "Health makes you feel like going some and not to feel lazy." Another, "To feel well makes you feel like being out of doors," and another replied, "Health is when you are in danger of Tuberkolosis."

To the second question fifteen pupils gave emphasis to the fact

that they want to be well in order "to go to school," "to be out of doors," "to be able to see friends," "to romp in the park," "to chase with my dog." One said, "I want to be well for when I am sick I have pains and that makes my mother feel sad." Another answered, "I want to be well for then you don't have to pay Dr.'s bills." This economic value of health was repeatedly expressed by the East-side boys.

To the third question, the advice given for maintenance of health was related generally to proper food, clothing, exercise, and sleep. Of the person who helped in keeping them well and strong, mother held first place with the doctor a close second. With the East-side boys this order was reversed.

In the sixth grade the questions asked were practically the same, with the addition of: "Is it better to play out of doors or in the house and why?" These children gave the same emphasis to health as a means of happiness. Two said, "Health is happiness." All gave expression to the general idea that being well means out-of-door freedom and ability to do things and to go to places. Practically the same health suggestions were given with strong emphasis upon exercise. This was especially evident in the papers written by the East-side boys. One boy said, "Exercise two times a day sometimes," and another, "Sure it is better to always play out of doors."

The question regarding the care of others brought some interesting answers: "If I am sick and it is contagious, not to let others get it"; "do for others like helping to get a milk station for babies"; "Be careful about spitting on floors"; "Tell people to sleep with windows open"; while one child surprises us with this store of "Don'ts": "Don't put snow down their backs; Don't breathe in other people's breath; Don't let somebody eat from your plate or drink from your cup."

These children were unanimous in the decision that mother helps more than anyone else in keeping them well. Father with the ability to pay bills was mentioned three times, the doctor, eight times, the street cleaner, janitor, milkman, and policeman were also mentioned. One child said, "My father helps me most, he keeps me strict and clean," while an analytical youth replied in this manner: "Mother (she cares for me); Father (the same); Milkman (because of pure

milk); Policeman (because of law and justice); Teacher (because of education)." All agreed it is better to play out of doors than in the house.

In the seventh grade the questions were the same in spirit with the addition of, "In order to be well and strong what are some of the things necessary to both plants and animals?"

To the first question all responded freely giving the same emphasis to the happiness side of life. One wrote: "Health means happiness, comfort, joy." In reply to: "Why do you wish to be well and strong," the answers were similar to those received from the fifth and sixth grades, only they were more definitely and maturely expressed. Among the answers were, "I want to be well to have plenty of schooling and games"; "I want to be well so I can play basket ball tonight"; "I want to be well to have a good time, be happy and as God wants me to be." The health suggestions were much like those noted before, pure food, exercise, cleanliness, being emphasized. The question regarding the care of plants brought out the ideas of similar care—they should, like a person, be bathed, given good food, air, and sunlight.

In the eighth grade the pupils stated that health means "success," "joy," "strength," "pleasure," "rosy cheeks," and "happiness." They want to be well that they may "have fun," "go to church, school and parties," "gain weight," and "not be a drudge to other people." Their health suggestions are confined mainly to the fresh-air exercise problem, while those for helping others are rather more surprising: "Don't spit in open places"; "Be clean at home same as at school"; "Keep yourself well; that will help others"; "Behave so you don't put an extra strain on your teacher"; "Don't pet anybody; come to school without an examination."

8. Another reason for unsatisfactory results in hygiene teaching is that too much attention is given to disease and not enough to health. This has been the case in much of the temperance instruction. Children may sometimes be instilled with wholesome fear by presentation of pathological effects of alcohol and narcotics. More frequently, however, if not depressed by disease pictures, they consider facts with wonder, sometimes with amusement, often with skepticism and indifference, but the constructive health influence would be much better gained by pointing out the domestic, social,

and economic evils resulting from intemperance and giving strong emphasis to ennobling ideals, or to positive standards of health, and power to do.

9. The present textbooks are on the whole quite unsatisfactory, because they contain too much anatomy and physiology with illustrations which are either not understood or too largely negative in effect. Very few textbooks contain enough sanitation, public health, bacteriology, practical individual, social, and industrial hygiene.

10. With the present prevalent method of teaching physiology and hygiene as a branch of science, error is made in teaching this subject in the first year in high school, before the pupil has had natural science, physics, chemistry, and zoölogy, which usually come in the later high-school years.

CONSIDERATIONS RELATING TO THE EFFECTIVE TEACHING OF HYGIENE

I. Health teaching includes two factors: (*a*) hygiene—the healthful conduct of the individual; (*b*) sanitation—the maintenance of an environment favorable to human health. Both aspects should be kept properly balanced and interrelated, in the educational progress of the child. No more human anatomy and physiology should be taught in elementary or high school than is necessary to make clear hygienic application, and this is very little indeed, much less than is taught now throughout the schools of the country. The study of his own body or mind by the pupil through systematic and detailed analysis should not be attempted until the individual is nearly or quite mature. Too early study of this kind not infrequently leads to morbid self-consciousness which may involve the body as well as the mind.

The power to concentrate attention upon oneself is a sign either of a diseased body, a diseased mind, or a highly trained mind.

The problem of health is not how to have a healthy stomach, but how not to know that you have a stomach, which comes to the same thing. The maintenance of health depends not upon continuous attention to bodily needs —which will wreck the health of the strongest—but on the formation of healthy habits and the value of such habits is that, once formed, they can be left to the subconscious mind, whilst the conscious self instead of feeling itself forever chained to the body of this death can dance in its fetters.[1]

[1] Saleeby, *Health, Strength, and Happiness*, p. 13

The cellular structure of the body, as bearing upon exercise and exhaustion; the rapid multiplication of microbes and bacteria in relation to antiseptic and prophylactic treatment; the menace of cats, house flies, and mosquitoes, and the quick souring of milk; precautions necessary to the prevention of the spread of tuberculosis; oxygen as a purifier of the blood; the cubic air space that should be allowed for each individual indoors; the principles of ventilation; the general functions of heart, lungs, arteries, and veins without regard to particular valves and veins; the relation of crookedness, decay, and absence of first and second teeth to digestion, and the precautions necessary to protect their enamel; tests for common food adulterants and the laws regarding pure foods and public health in general; the relation of overfeeding and overexercise to mental torpidity; marked symptoms of dangerous diseases for which a physician is needed; the usual remedies for familiar forms of sickness commonly given home treatment; all prophylactic precautions possible to the masses—if these and other facts directly bearing upon healthy habits are associated with them through continual repetition and persistent practice, little time will remain in the elementary school for the details necessary to the mastery of physiology as a science.

Since hygiene means habit, the general basis for the grouping of hygienic data should not be anatomical and physiological structure, but the activities that make health, whether they are personal, social, or political. For example, all useful knowledge bearing upon the circulation of the blood should not be centered about the heart and lungs, but rather all facts likely to serve as a stimulus to the breathing of fresh air should be grouped together or all that tend to result in cleanliness of person and environment.[4]

There is a growing body of conviction in the minds of many that the illustrative material for health instruction should be taken from actual life, even if this involves certain morbid conditions in the environment, but that butcher-shop specimens should never be used, nor should dead creatures and dissections of animals in the laboratory be employed in the teaching of physiology and hygiene.

II. Teaching hygiene and sanitation in the schools should aim at direct inculcation of health habits as much as at the imparting of knowledge concerning hygiene and sanitation. School credit for hygiene teaching should be based partly and primarily upon the extent to which the pupil lives hygienically. Credit in hygiene is now included in the requirements for graduation from the New

[4] Yocum, "Teaching of Hygiene in the Elementary School," *American School Board Journal*, November, 1908, p. 4.

York public schools and also for promotion from grade to grade. The first item in these requirements reads:

Practical hygiene.—The effort and success of the student to follow out the instructions in hygiene on matters of cleanliness of the face, and fingernails, mouth, teeth, hair and clothing, should form the greater part of the item.

III. Hygiene should be taught continuously throughout the school life of the child. Such instruction in the elementary school can best be given, not through a special course in hygiene, but by the natural, reasonable application of any fact or principle which may arise in connection with any subject, to the problem of healthful living. Such applications may be made sometimes in school assembly and frequently in schoolrooms to the class of children or to the individual pupil. Frequently opportunity will be found in relation to season of year, weather, interest in games and festivals. Correlation should be made with other subjects of the school curriculum, e. g., nature-study, primitive life, industry, etc., wherever such applications in health teaching may be made in a reasonable and effective way.

Every step takes on new meaning when the learner sees its place in the series of operations culminating in the commercial food supply of his own community, its sanitary regulation and domestic consumption. The elements of physiology and hygiene, and of physics and chemistry, are also called into requisition; they are all indispensable in fixing values of industrial products and determining economy in technical operation. What makes for hygienic living is as well worth knowing from the economic standpoint as what mechanical appliance will most increase the output. A proper study of the industries, therefore, I contend, will bring about a unified and closely correlated course in the biological and physical sciences by way of supplying the information wanted by the child in adjusting himself to the real world.[5]

In the elementary school as well as in the high school and college, correlation may be made between hygienic and ethical and social values. The fundamental ethical principles are closely related to the large, primitive, physical, and racial aspects of living.

IV. While attention of course should be given to the personal health of pupils in teaching hygiene, much emphasis should be

[5] J. E. Russell, "School and Industrial Life," *Educational Review*, December, 1909.

placed, as already suggested, upon the health of school, home, and community, and the obligations of the pupil in relation to these social interests.

Children, like adults, can be interested in other people, in rules of conduct, in social conditions, in living and working relations more easily than in their own bodies. The normal healthy child thinks very little of himself apart from the other boys and girls, the games, the studies, the animals, the nature wonders, the hardships that come to him from outside. . . . . Human interest attaches to what parks or excursions are doing for sickly children, how welfare work is improving factory employees, how small-pox is conquered by vaccination, how insurance companies refuse to take risks upon the lives of men or women addicted to the excessive use of alcohol or tobacco. Other people's interests—tenement conditions, factory rules—can be described in figures and actions that appeal to the imagination and impress upon the mind pictures that are repeatedly re-awakened by experience and observation on the playground, at home, on the way to school or to work. "Once upon a time" will always arrest attention more quickly than "The human frame consists—." What others think of me helps me to obey the law—statutory, moral, or hygienic—more than what I know of the law itself.[6]

Because the problems of health have to do principally with environment—home, street, school, business—it is worth while trying to relate hygiene instruction to industry and government, to preach health from the standpoint of industrial and national efficiency rather than of individual well-being.[7]

Sanitation then, in its various aspects, should form a prominent part of the health instruction of the pupil at all ages. Bacteriology has a legitimate place in the high school and in simpler presentation even in the elementary schools.

Such courses should be given in the public schools in such grades as to reach the children between eight and sixteen years old; these courses should consist in their simplest form of demonstrations, through use of agar or gelatin plates, of the existence and distribution of bacteria in air, water, milk, dust, feces, etc., and especially on hands; extending somewhat in scope and in individual experimental work as the grades are ascended. Microscopes would not be essential and the necessary apparatus and media could be furnished at a very low cost. . . . . In the high schools, gradual advance in the detail of experiments should be arranged with the quantitative experiments, possibly some species work, and the microscope should be introduced.[8]

[6] Allen, *Civics and Health*, pp. 7–8. [7] *Ibid.*, p. 10.

[8] H. W. Hill, "Bacteriology as a Non-Technical Course for Public Schools," *Science*, November 5, 1909, p. 627.

V. The textbooks for health instruction in the future will differ widely from the great majority in present use. These must present for teacher and pupil the impersonal material of sanitation, bacteriology, civics, applied sociology.

VI. The pupil should get health instruction from many sources, from parents, family doctor, older brothers and sisters. So far as the school is concerned, the teacher who knows the pupil best and is brought into closest contact with him will have the best chance to teach health as well as ethics. In the elementary school the grade teacher will have this opportunity and responsibility. In the high school this task will fall to the special teacher who has the greatest interest in health teaching, the best preparation for such instruction, and the most favorable opportunity to influence personality and habits of the student. With the present trend in education the teacher of physical education will be most favorably situated to deal with the personal, social and ethical aspects of health. The bacteriology must be taught by the teacher who has had special training in this phase of biology with the laboratory methods.

VII. Finally, the accomplishment of this broad, well-rounded health instruction in the schools must necessitate a clear appreciation by boards of education, superintendents, and principals of what should and may be accomplished. The teacher must have broad and thorough preparation for this instruction. Such professional training must be given in the institutions where teachers are prepared for their work. If teachers are already overburdened and have too many subjects now, to learn and to teach, then other things must give way and make place for this health side of education if it is as important as it appears to be at present.

Passing reference only is made here to the teaching of sex hygiene in view of the encyclopedic report on this subject, presented by Professor Henderson in the *Eighth Yearbook* of this society.

Instruction with reference to sex is, in many respects, the most vital and important phase of health education. The possible direct and indirect benefits of needed work in this line upon the well-being of the individual, the home, and society at large cannot be overestimated.

Adequate instruction in sex hygiene cannot be given until:

(*a*) Enlightened public opinion recognizes sufficiently the necessity for such instruction, and exhibits confidence in the ability of responsible advisors of children and youth to give the instruction needed; (*b*) Teachers are intelligent, wise, and tactful enough to give such instruction and guidance successfully. Comparatively few teachers today are capable of meeting the obligations which are involved in relation to the teaching of sex hygiene.

PHYSICAL EDUCATION

The term physical education is employed in some institutions and by some thinkers and writers to include all the different factors in education which have to do with the health of the pupil or student. Physical education is used here more narrowly and technically as referring to the supervision of large fundamental motor activities, expressed in play, games, dancing, swimming, gymnastics, and athletics.

The history of physical education presents in interesting progression the different ideas obtaining through the period of recorded history regarding the relationship of physical education to the life and education of the human being. The Greek idea as developed by the Athenians represented a balanced conception and practical realization of the relation between the physical and other aspects of education which have not been equaled since that period. The aim of the Athenians was to develop a beautiful mind in a beautiful body.

> Everything that is good [says Plato in the *Timaeus*] is fair and the fair is not without measure, and the animal who is fair may be supposed to have measure. Now we perceive lesser symmetries and comprehend them, but about the highest and greatest we have no understanding; for there is no symmetry greater than that of the soul and body. This, however, we do not perceive, nor do we allow ourselves to reflect that when a weaker or lesser frame is the vehicle of a great and mighty soul, or, conversely, when a little soul is incased in a large body, then the whole animal is not fair, for it is defective in the most important of all symmetries; but the fair mind in the fair body will be the fairest and loveliest of sights to him who has the seeing eye.

Well might Charles Kingsley say of the Greeks, "To produce health, that is, harmony and sympathy and grace, in every faculty of mind and body, was their notion of education." The sculpture and literature which have come down to us from the best period of Greek civilization show how remarkably they achieved their ideals of beauty.

The climax of the physical education of the Greeks occurred in the Olympic games. It is a sad commentary on the sanity of the present time that in the attempt to revive the Olympic games, the

contest which has won most popular favor is the Marathon race. This may have been useful in a Homeric age, but it is entirely out of place in our modern world. Many boys of high-school age at least have without doubt been injured during the last few years in training for, or participating in, "Marathon races."

The dualistic philosophy of the early Christian era extending down to the Middle Ages gave no opportunity for physical education or adequate care of health. So long as the body was considered evil, the enemy of the spirit, sanity was lacking and rational education was neglected.

With the revival of learning, consideration was given to physical education with other aspects of human culture. There were early efforts to express both in theory and practice, the idea of physical education as derived from the study of the classics and the more recent influence of the age of chivalry.

Vittorino da Feltra (1378–1446), considered the first Italian schoolmaster of the new era, introduced in his school at Mantua, dancing, riding, fencing, swimming, wrestling, running, jumping, and archery. He seems to have been much ahead of his time, as outside of the training of young noblemen in various parts of Europe, no similar school is recorded until Basedow opened the Philanthropinum at Dessau in 1774. In the meantime several educational reformers wrote in liberal-minded fashion about physical education.

Martin Luther recommended the knightly exercises of fencing and wrestling. Joachim Comerarius (1500–1574) published a brief dialogue of bodily exercise, believing that boys should be encouraged to run, jump, wrestle, fence, etc. Comenius (1592–1671) believed in education through the senses and was first to enumerate the principles which lie at the foundation of kindergarten philosophy. He thought that a half-hour of recreation should follow each hour of study. Montaigne (1533–1592) is often quoted: Health and strength are necessary—

> for the soul will be oppressed if not assisted by the body. . . . .
>
> Our very exercise and recreation, running, marching, etc., will be a good part of our study. . . . . I should have the outward mien and behavior, and the disposition of his limbs formed at the same time with his mind. . . . .
>
> It is not a soul; it is not a body we are training up; it is a man; and we

ought not to divide him into two parts and, as Plato says, we are not to fashion one without the other, but make them draw together like two horses harnessed to a coach.

John Locke (1632–1704) says:

Keep the body in strength and vigor so that it may be able to obey and execute the orders of the mind. . . . .

A sound mind in a sound body is a short but full description of a happy state in this world. He that hath these hath little more to wish for and he that wants either of them would be but little the better for anything else.

Emile Rousseau (1712–78) says:

The body must needs be vigorous in order to obey the soul; a good servant ought to be robust. . . . . The weaker the body, the more it commands, the stronger it is, the better it obeys. . . . . In order to learn to think we must exercise our bodies which are the instruments of our intelligence.

Pestalozzi (1746–1827) attempted to devise a system of school gymnastics based upon the nature of the body, and tried to combine industrial as well as general bodily training with mental and moral education in his experiments for the amelioration of the common people.

The essence of elementary gymnastics [says Pestalozzi] consists in nothing else than a series of exercises of the joints, in which is learned, step by step, all that the child can learn with respect to the structure and movements of the body and its articulations.

In this form of explanation Pestalozzi was one of the first to formalize in theory the process of bodily development, to make it a mechanical method of subjective and artificial control, and to favor an anatomical (as distinguished from a functional) idea of physical education which is subject to serious question at the present time.

Guts Muths (1759–1839) who taught at the Schnepfenthal for over fifty years, defined gymnastics as a system of exercises having bodily perfection for their aim. Here again is a tendency expressed, to develop the body for its own sake and somewhat independently of its true relation to mind and soul.

F. J. Jahn (1778–1852) is known as the "father of German gymnastics." Jahn was an extreme patriot and his desire was to rebuild the bodies of the young Germans in order that they might withstand the French. Jahn used games to some extent, but later

devised a great variety of forms of apparatus whose use seemed designed to develop strength of body in the shortest possible time. Jahn performed a great service to military Germany, but in his work scant respect was paid to physiology and anatomy and to some of the psychologic needs in the education of the young.

Adolph Spiess, a little later in the early part of the nineteenth century, became the pioneer in the development of school gymnastics. He also as a musician adapted musical accompaniments to gymnastic movements. His material was systematically arranged, but it neglected some essential requirements of physical education.

P. H. Ling (1776–1839) led in the development of the Swedish gymnastics which resulted in the most precise system of movements and exercises which the world has known. This system was elaborated to meet the needs of human nature in what Ling and his followers considered to be "its fallen and dilapidated state." In their interpretation of physiological principles, which seems today lacking in many vital elements, gymnastic movements were elaborated to meet needs which were expressed as "military, pedagogical, medical, and aesthetic."

In several countries in Europe outside of Sweden, and in parts of the United States, Swedish gymnastics have gained as prominent a place in the schools as has the so-called German system or any other method. All the divisions of gymnastics according to Ling tend to bring about unity.

> Pedagogical gymnastics develop the *minute endowment* to unity among the parts of the organism. . . . . In military gymnastics the unity is sought between the body and the weapon in relation to the expression of antagonist. . . . . By means of medical gymnastics, one seeks to restore unity between parts which has been lost through their abnormal conditions. . . . . Through aesthetic gymnastics, the subject expresses the unity which exists between the mental and bodily being. . . . . Therefore, all the principal divisions have a mutual interdependence, and gymnastics, in which no regard is paid for the unity which should exist in and among these parts, have no laws but are simply based on whim or fashion.

The Swedish system required a degree of exactness in movement beyond anything demanded by other methods, and the principles of activity as outlined by the Swedes are considered by many to be structural rather than functional in spirit, lacking in many of the

important qualities demanded by our present-day physiology and psychology.

The outdoor sports of England and her colonies represent more than any other national movement in physical education, the expression of the play instinct, and present in striking variety and range of recreative elements a great programme of games and sports which has been an essential factor in the development of a great world power, for a long time the foremost among the nations. The English sports have had a prominent place in the life and physical education of our own country.

In the progress of physical education in the United States, two distinctive influences have arisen in this country. Dio Lewis (1861) introduced rather widely to popular use free gymnastics performed with music, and exercises with dumb-bells, wands, and other forms of hand apparatus. Sargent, more recently, as a phase of his support of physical education, has elaborated the system of developing appliances by means of pulley-weights, in which, by means of graded weights, measured resistance is given to definitely localized muscular movements. The attention which just now is being given to play, games, and swimming, as well as the revival of folk and national dancing, represents additional features and indicates the wide range and confusing variety of the manifold elements related to physical education.

All of the various materials and influences enumerated, from Greek onward, have entered into the relatively brief development of physical education in this country, and are all at the present time in use, though fortunately not in any single institution, nor in collective effect upon a single pupil or group. According to the prominence of national, political, or personal influence in school or community, certain ideas obtain control for the time in this as in other aspects of education.

There is at present, therefore, throughout this cosmopolitan country great diversity of opinion with reference to controlling ideas in physical education and complete lack of agreement regarding material and methods of instruction. This is inevitable and probably salutary, as opportunity is thus given for free experimentation and for local adoption of ways and means for recognized aims.

It is apparent to many, however, that physical education, more

particularly in the public-school system of this country, has on the whole lacked the support of a well-organized body of thought which is in harmony with the best current educational theory. To many, again, it is evident further that the principles of physical education, even as formulated, have not kept pace with general educational progress.

Several reasons may help to explain this condition of affairs. Not until the last few years has there been a practical recognition of the broader social scope of education with the implied obligations to the physical and social, as well as the intellectual and moral needs of the pupil. Beyond this, it is but recently that modern psychology and physiology have proclaimed the scientific facts which have shown the more vital and intimate interdependence between the different aspects of life, which are called physical, intellectual, and moral.

Up to the present time general educators have given little attention to the study of physical education. Such study, when undertaken, has stopped with the external details of school management; has been superficial as a rule; and has failed to penetrate to the intrinsic and vital phases of the problem.

On the other hand, the great majority of the physical educators have been ignorant of the general principles and tendencies of education. They have been trained narrowly, to think of and deal with physical education much as a detached problem, and too largely on the materialistic physical plane. This tendency to an unrelated specialization is not confined to physical education, but is perhaps aggravated here, inasmuch as a considerable part of the impetus in the development of this field has come through agencies outside of those directly educational. It has been unfortunate, also, in some respects at least, that so many of the teachers of physical education throughout the country have received their professional training in special normal schools, away from students in other departments of teaching, and outside the atmosphere of general education.

It is the business of physical educators, in co-operation with the agencies which should provide for hygienic care, to secure for the pupil, through a rational distribution of motor activities, certain health values represented by favorable posture, organic vigor, and other desirable biologic qualities. If necessary, these health quali-

ties must constitute the main goal in this field, but it is most desirable that physical education should occupy itself with a programme of activities for the young which would secure these physical aspects of health without fail, as by-products, as it were, while the pupil is being guided in the doing of things which will result in the acquirement of mental, moral, and social benefits. Health, then, in the narrower sense, becomes an essential means or condition in physical education to the accomplishment of certain exceedingly valuable results in the general education of the child.

It is unfortunate that the physical and muscular aspects of health occupy so large a part of the horizon of the physical educator.

The new asceticism must assert the value and duty of exercise, but it has only contempt for the ludicrous cult of muscle which is one of the follies of the age. . . . .

We must remember, what is so constantly forgotten, that vitality and muscularity are not one and the same thing.[1]

Physical education is much more a matter of the nervous system than of the muscles. It should be considered more a qualitative than a quantitative affair.

Physical education is for the sake of mental and moral culture and not an end in itself. It is to make the intellect, feelings, and will more vigorous, sane, supple and resourceful. It should make for control and keep the body under and make it a servant and not a master. Practical ethics of body and soul is the core of all. . . . . The psychologizing of athleticism is now its crying need. The ordinary medical side is not enough. . . . . The history and psycho-physiology of military drill, dancing, the great national sports and games and their effects are needed.[2]

Physical education today, then, is too much occupied in: *a*) Seeking certain postural and corrective results which are not after all satisfactorily obtained in class exercise by formal movements involving the consciousness of muscle and body by the pupil. These results, except as obtained in individual cases by remedial gymnastics, may be gained, in the main, as well or better through exercises which are more natural, spontaneous and enjoyable;

[1] Saleeby, *Health, Strength, and Happiness*, pp. 17, 101.

[2] G. S. Hall, *Proceedings of the National Education Association* (1908), p. 1015.

b) Training the body too much within itself, and without sufficient regard for the attitude of the mind and for the indirect effects of exercise upon disposition and personality;

c) Developing various forms of ability which are not, in identity, similarity, or analogy, closely enough related to the interests and activities of human life to justify the time and effort given to them.

Physical education has not yet an integral place in the educational theory and programme of the country. It has been given certain space and time, and often grudging recognition in response to the hygienic demands (usually the protests of the physicians) in the effort to counteract, or to compensate for, the unhealthful influences of school life.

Physical education has had, however, not nominally perhaps, and not always adequately, but in effect, a very logical place in the kindergarten. Its position in the curriculum of the school above the kindergarten has been more uncertain. The petition of the physical educator is very commonly for more time in the curriculum. There is suspicion in the minds of some that the proffered material of physical education has frequently not been of a character to rationally compel the recognition asked. When physical education presents a programme which is psychologically and physiologically sound, and therefore, pedagogically acceptable, it will find itself in organic relationship with education as a whole and to the other subjects or departments represented.

Physical education should provide, in instruction and supervision, for the desirable margin of motor activity which is not otherwise supplied in the school curriculum or in the life of the pupil outside of the school.

The main function of education, perhaps, is to train the human mechanism toward efficiency as an instrument of self-expression, with reference to the various opportunities and responsibilities of life, at the time and later. The child learns far more of permanent value through what he does—and this always means neuro-muscular action of some sort—than through what he sees or hears or perceives in any way directly with the five senses. In fact, perception of sensation depends on some degree of activity. Motor sensation is the great cornerstone in the foundation of human education. The experience of a Helen Keller demonstrates how much can be

accomplished in education without sight and hearing if the main avenues of sensation from movement are left open.

The psychologists maintain that action even is necessary to the complete consciousness of sensation.

> The unity in the reference of the sensation comes in on the side of the act. . . . . It is not likely there can be any well-defined consciousness of the respective sensations, as such, except as they become co-ordinated in single activities and are made to serve definite functions in the carrying out of the activity. . . . .
>
> Consciousness grows in definiteness of reference and content as activity becomes more and more complex. Every emotion presupposes a definite organization and co-ordination of previous activities. The so-called attitudes of powers of mind, are simply differentiations of consciousness with reference to the need of action. The mental attitudes of all mature minds are strictly co-ordinate with the complexity of activity of which they are capable.[2]

The psychology of movements performed on the gymnasium floor or in the playground involves the same principles and elements as those belonging to classroom, laboratory, and studio, and in a particular case the former may involve a richer content and more important result than the latter. If the motor training and experience of the child are complete or satisfactory, even from the broader psychological standpoint, then, so far as muscular activity and exercise can secure these results, the child, as a rule, will have favorable posture and physique; organic health and vigor; facility and efficiency in action; aptitude and power for the tasks which may reasonably be demanded during a life career.

The determination of the scope and content of this entire range of motor activities, must always be a provisional one in relation to the typical or individual child, subject to revision as circumstances may dictate. The determination of the margin of motor action which belongs to physical education will depend upon the answer given to the general problem, and upon the breadth and variety of motor training demanded by the "humanistic, scientific and industrial" aspects of the newer education. This margin will vary with the varying course of study in different schools and sections of the country. The more completely the rational and liberal school curriculum may provide even incidentally for the physical education

[2] King, *Psychology of Child Development.*

needs of the pupil the better it will be for the child. Recent progress in education shows a marked increase in the larger motor elements adopted in the regular work of the school in connection with manual training, nature-study, school excursions, school festivals, and the like.

The physical education margin, in providing supplementary training, will naturally deal with the large, more primitive, and more fundamental forms of action. It should always strive to secure and maintain the basic "fundamental" power upon which the more "accessory" elements involved in the curriculum may safely rest. At times it should concern itself with the supports and buttresses of this superstructure in the attempt to preserve stability and equilibrium. This idea is better expressed in terms of function as it is related to the balancing of the programme of the pupil by providing for recreation, change of activity—keeping the center of gravity in the right place while all the time some of the most vital and larger values in education are industriously pursued by the teacher.

The subject-matter of physical education is found in play, games, dancing, swimming, outdoor sports, athletics, and gymnastics (reconstructed to satisfy educational needs). These headings are not mutually exclusive but are used to cover the range of activities.

The content of the physical education margin may seem less serious and dignified to some than the study of the humanities, science, or industry, but it may at any particular time, and in the long run, be as important as any or all of them, and much more so, ofttimes, for the individual. Further be it stated, that the more technical and specialized forms of ability in education depend very vitally for present and future well-being upon all that is logical and justified in physical education.

This proposed programme looks to the process of human evolution for general guidance concerning a part of the method to be pursued. Primitive men, our ancestors more or less remote, became strong and healthy; developed physical and moral powers through play in childhood and by doing very real things in hunting and fishing, in agriculture, in war, in industry, in commerce, in supplying human needs; but always in immediate unconsciousness of self, without understanding what went on in muscle and nerve. They were expressing ideas clamoring for utterance, or engaged in

accomplishing tasks with concrete and absorbing goals in actual or in mental view. Children and young people must do things today, not necessarily identified in type and purpose with those of primitive life, but in the same general spirit and manner if the method is to be effective and the results satisfactory.

Certain conditions seem necessary for rational exercise in physical education if the best results are to be obtained.

I. The activities of physical education should be carried on out of doors, whenever this may be made possible. The gymnasium should be considered an emergency-space, valuable to be sure, when required by inclement weather and under other circumstances; but it should never interfere with possible use of nature's infinitely better playroom out of doors.

II. The exercises should be natural in type, satisfying by their execution the play instinct and the fundamental powers and faculties as they develop, with due regard to the ancestral habits of activity and to the future practical needs of the individual.

Not every possible action of voluntary muscles and nerves is desirable in education by any means, even though this action may strengthen muscle and nerve structure, develop exact control and enhanced power of co-ordination, and bring results which seem to fulfil the conditions of improvement. We are learning by practical experience, and through the teachings of the newer psychology which aims to interpret this experience, that true culture of the highest type depends upon gaining faculty and power through the doing of things which correspond in type and quality, in the main motives and reactions, to the worthy deeds of the race and more particularly to the actual work and conduct of humanity today.

Education, whether in physical training or other branches, should secure to the pupil, beyond mere bread-and-butter needs, the ability to meet the wider opportunities and the possible emergencies in life; but the performance of tasks requiring primarily subjective control of action, and aimed too directly (and by a short cut) at benefit to bodily health or mental faculty, may not only fail to accomplish its direct purpose, but also fall short of the intended indirect benefit to other faculties and powers. There are many "fancy stunts," as well as exact and intricate performances in various branches of education which lack rational sanction from modern educational

theory. In the past they have been considered extremely valuable, not only because they were showy, but for drill and discipline. They are dropping very rapidly out of use in relation to reading, spelling, writing, manual training, and most of the departments of teaching.

Formal gymnastics, free-hand movements, for the most part, and much of the apparatus work of the gymnasium, belong to the category of artificial "stunts," mechanical movements; lacking the purpose, mental content, and objective which are essential to sensible educational performances. Most of the free-hand exercises, particularly, are mechanically rigid, jerky, and awkward, as compared with natural, useful movements of the body. They are uninteresting and distasteful to most boys and girls except in the early elementary grades, when they are considered by the physical educator even relatively less important.

Formal gymnastics in physical education correspond to drugs in medical practice. The movement in medical treatment even is away from the use of drugs. In a similar way progress in physical education must be away from all formal, artificial kinds of movement.

It is important that a reasonable amount of physical education should be required of every pupil and student in school and college. It is correlatively important that this training should enlist the interest and enthusiasm of each pupil, not primarily in keeping healthy, but in the doing of things, having intrinsic objective interest, whose performance will insure good health. Much of the required physical education at present cultivates a dislike for healthful exercise. This is inexpressibly unfortunate, and forms an indictment against such instruction in as much as one of the most important purposes of physical education should be to cultivate the liking for rational, pleasurable, healthful exercise.

III. In physical education, as in other branches, the pupils in practice should either: (*a*) express an idea, feeling, or emotion, which seems worth expressing, e. g., in dancing, pantomime, or other form of dramatic representation, or (*b*) there should be some definite objective aim or effect to be attained as the result of the muscular effort performed, as in maintenance of squad formation in marching, hitting a ball, throwing a ball into a basket, swimming to a given point, out-running a competitor, or any one of the indefinite number of things to do in games.

Given a rational observance of sanitary and hygienic practice in the schoolroom and a fair amount of time for play and recreation in fundamental motor training, and all the desirable qualities of health in structure and function of the body will accrue to the child without the artificial movements already referred to, except in individual cases (which will be fewer as education becomes more hygienic) where the most exact and accurately applied movements should be used like medicine to correct individual weaknesses and tendencies.

IV. The activities in physical education should be correlated whenever feasible with the subjects and activities with which the child is occupied elsewhere in the school or outside. Games vary with the season of the year, with climate and weather changes. There are many opportunities in connection with study of literature, history, nature-study, art, industry, and other subjects, to employ dances and games which have definite relation to the subjects in hand and give the child a most valuable opportunity to express himself more completely in relation to the interest which occupies his attention. It seems important for many reasons that the more accessory, specialized, symbolic modes of expression in education should be reinforced and broadened by the larger and vital forms of action which physical education may, and should, provide.

Folk dances may be correlated with seasonal interests and festivals, e. g., harvest time, Christmas celebration, patriotic anniversaries, May Day, etc. The development of the festival idea in relation to school work seems to have many valuable possibilities if the festivals can be utilized in a way to improve the desired general resultant of school work and not interfere with the attainment of recognized ends. The school festival as a rule, wins the enthusiasm of pupils. It affords opportunity for genuine correlation of literature, history, music, fine and industrial arts, and physical education; if physical education is ready to provide live material in dancing, marching, pantomime, and games.

To utilize the opportunities for correlation it is necessary that the teacher or supervisor of physical education be acquainted with the curriculum and the work of the school as a whole.

V. Gymnastic technique (as distinguished from marching, dancing, games, athletics), when used under the head of formal gym-

nastics or other titles, should consist in the practice of movements involved in actual and natural kinds of performance, or closely related in form to such movements, for the purpose of acquiring greater strength and skill, so that the complete action or original performance may be more effectively executed. Such technical practice is ordinarily better performed through individual exercise, as a musician practices on the instrument, or a singer practices with the voice. It is possible, however, to practice advantageously some of the large movements involved in dancing and games in class instruction. Children in the elementary grades even may devise movements and construct gymnastic drills which will satisfy the psychologic demands of such drills, and incidentally give desirable physiological results; e. g., a third-grade class constructed a gymnastic drill which was designed to improve ability in rope-climbing. This drill naturally lacked the mechanical precision of Swedish gymnastics but it possessed enough value of another kind to more than make up for what was lost.

VI. The pupil, while intent upon some external result in individual or co-operative effort, should be unconscious of his own body or of the purpose of exercise to benefit his body or health.

Self-consciousness, self-analysis of the mind or body in education, except as incidentally required in the direct effort to attain an external end in a more effective way, must always detract from the best results, whether measured in terms of bodily health, or skill in action; the actual products of effort expended, or the indirect effects of education.

VII. Mechanical uniformity and precision of movement, in a group or class of children, can logically be demanded, not primarily or simply because the teacher asks for, or orders it, or because it appears better to the spectator, but only when the situation, expressed as an external problem, requires it. Evolutions in marching, and sometimes dancing, necessitate precise uniformity in movement among smaller or larger numbers of actors, and these evolutions must be changed by word of command of teacher, officer, or leader. In general, however, it is most desirable that mechanical uniformity should not be demanded, but that, with the observance of certain general principles of action, the pupil should be left free to express individuality in action. Uniformity and precision in gymnastics,

persisting from the old military régime in physical education, particularly, have come to be fetishes, and in the effort to secure them, important values have often been neglected.

It is significant and illogical that the gymnasium is practically the only place in school where uniformity in action is expected of all pupils in a grade. In the future, gymnastic technique must be reconstructed in relation to real conduct in life, to meet psychic and functional needs rather than the mechanical anatomic standard of precision which prevails so largely at present.

VIII. Physical education should be supervised and directed with reference to the beneficial social and moral results which may be gained by the right performance, in play, games, and athletics, of the large fundamental types of human action.

It is because the brain is developed, while the muscles are allowed to grow flabby and atrophied, that the deplored chasm between knowing and doing is so often fatal to the practical effectiveness of mental and moral culture. . . . . The trouble is that few realize what physical vigor is in man or woman, or how dangerously near weakness often is to wickedness, how impossible healthful energy of will is without strong muscles which are its organ, or how endurance and self-control, no less than great achievement, depend on muscle habits.[4]

Spinoza makes the pregnant remark that we do not know what Body is capable of. We may go a step farther and, following Aristotle, declare that we shall never know, till Body finds its true function as instrument of fully developed soul. For materialism consists, not in frankest recognition of matter, but in the assignment to it of a spurious supremacy or independence. There can be no materialism in utmost emphasis upon physical education, so long as "Body for the sake of Soul" is as it was with Plato, the presiding principle of educational action.[5]

Very little profitable instruction in theoretical ethics can be given in the elementary or even in the high school. Children and youth get most of their moral instruction in relation to action, and many important ethical principles may be instilled in connection with the large primitive types of conduct involved in personal health problems and in games and sports. The playground, gymnasium, and athletic field afford the best opportunities for the learning of moral lessons,

[4] G. Stanley Hall, "Moral Education and Will-Training," *Pedagogical Seminary*, Vol. II, 1892.

[5] MacCunn, *The Making of Character*, p. 59.

sometimes even by college students. The president of a great university said a few years ago, "The instructor of physical education has a more powerful influence upon the morale of students than the teacher of any other subject." It is most important then (1) that this teacher should have an adequate appreciation of the moral influence that should be exerted, and (2) have personality, character, and tact to exert such influence wisely and effectively.

IX. In the fifth or sixth elementary (or the first or second grammar) grades when some of the girls enter the pre-adolescent period of greatly accelerated bodily growth, boys and girls should have the more vigorous games and exercises in separate classes, and from that time onward in their physical education the forms of exercise should be adapted to sex differences as well as to advancing age and personal needs.

X. While in physical education certain psychic, social, and ethical results should be directly sought, the forms of exercise should always be arranged and controlled so that favorable physiologic values may be obtained. In other words, physical education should always be hygienic in the highest degree. More than this, physical education must not only be hygienic for the typical pupil of any particular age, but it must be safe and hygienic for each individual pupil. This can only be accomplished on the basis of knowledge of the health condition of each pupil. Many students, both boys and girls, in our schools have been injured, and are being injured, by participation in games and exercises which are too severe for them, with their individual health weaknesses and limitations. The health inspection, advocated earlier in this report, provides an intelligent basis for the individual adjustment of exercise.

Some of the faults of the present methods of physical education are indicated by implication under the previous headings.

Brief reference is now made to certain common and very practical errors in present physical education teaching which have a direct bearing on health—

a) It is an error to teach pupils to "toe-out" in the gymnasium or on the drill ground, in standing, marching, running, and dancing. Turning out the toes tends to weaken the foot—to produce "flat foot." The "straight-foot" position with the feet parallel (not

necessarily together), or with toes only slightly turned out, is the best position.

b) There is too much stamping in gymnastic practice. The ball and heel of the foot should never strike the floor at the same instant. If this occurs the foot ligaments are often strained and this may weaken the arch of the foot. In dancing, running, jumping, and in stepping or changing position in any way, the ball of the foot should always strike the floor first. Jarring of the body should be reduced to a minimum. There is too much emphasis in gymnastics upon downward movements with arms, legs, and body, and not enough effort to lift up and hold up the entire body against the force of gravity.

c) No gymnastic movements taken when the pupil is standing should require backward bending of the spine except as this occurs unconsciously and to a slight degree when the very laudable effort is made to lift or hold the chest up and forward.

d) There is a frequent tendency to teach girls and young women gymnastics, with and without apparatus, which are too strenuous and heavy for them. Girls should be trained in the gymnasium how to land lightly on the toes; how to come down a rope from a moderate height; how to get off a street car properly; how to swim if there is opportunity for such instruction; but jumping, and swinging by the arms, should be controlled and limited carefully for adolescent girls and young women. The subject-matter of physical education needs revision in relation to the requirements of girls and women.

e) Too often the teacher of physical education, intent upon the conduct of class or group as a whole, is not sufficiently aware of the individual, and as a result one or more pupils may exercise beyond the point of reasonable fatigue, or in some way prejudicial to personal well-being.

SOME FORMS OF EXERCISE IN PHYSICAL EDUCATION

The fundamental impulse or motive to be considered in physical education is play. Those students who study play most carefully give it most serious consideration with reference to its possibilities in the life and education of the child. The more strenuous and intellectual modern life becomes, the more important it appears to be

to cultivate the spirit and to provide the chance to play for child and adult. The theories of play are not altogether in agreement, but whether one believes in the Spencer-Schiller theory that play is due to the effort of surplus energy to express itself, or in imitation or recapitulation theories, or in the Groos theory of instinct, all may agree that the young of animals exhibit the play instinct and that the human child has his full share of it.

The distinction between play and work for the child is not very definite for some wise people believe that the more like play the child makes his serious tasks, the more benefit he will derive from them. So in physical education it is most desirable that the child should have opportunity and guidance for the doing of those large activities which will keep him vigorous and robust, which will develop alertness, self-control, with the other desirable qualities, and all in the spirit of joyous, free, exultant movement.

It may be justly claimed that the child gains more educationally, in the first eight or ten years of his life and lays a surer foundation for the mental and physical health of after life through vigorous, unrestricted physical activity than through any other factor whatsoever. By this I mean spontaneous play under favorable conditions, with accompanying fresh air, sunshine and good food, supplemented and enriched by gymnastics and athletics, including swimming. I do not mean that nervously exhausting and deadening drill known as the Swedish gymnastics, which, in the name of educational gymnastics, adds fatigue to fatigue by taking the initiative away from the child and forcing him to pay constant and close attention to the orders of the teacher, that he may execute with precision entirely uninteresting and conventional movements.[6]

The plays and games of childhood present ever-varying conditions, constituting both mental and physical problems of the highest educational value. The child is habituated to make rapid judgments in the face of changing conditions. He must be constantly on the alert, must perceive conditions as they are, must immediately adapt his own action to their quick-changing relations, and, as a result, he gains the perfect control of his body which serves him throughout life. As teachers, we must recognize that the judgments upon which all these active movements are based are intellectual operations. In play the child is the unit of force; he initiates his own conditions. His limitations are self-imposed. His self-control lies in execution

[6] G. W. Fitz, "Hygiene of Instruction," *Proceedings of the National Education Association* (1898).

rather than in inhibition. He is concerned with self-expression rather than with self-repression. Play thus relates itself to the truest conception of education, the development of the power of the individual to act as a self-directed unit in the community.[7]

In the large social problem of providing for play, the playground becomes the primary and essential factor in making play reasonably possible. The gymnasium, schoolroom, nursery, or other inclosed space should be considered an adjunct to the playground. As the little child gets older the play impulse expresses itself more satisfactorily in games; simple at first, and later more highly organized. From the almost unlimited range of game material at present available, certain lists are here suggested as adaptable to the different grades in school, and to boys and girls when games and exercises should be adapted to their separate needs.

Two general classes of games are used very largely on the playground or in the gymnasium: (*a*) the "dramatic game" which is characterized by the expression in movement of the child's ideas, without reference to any objective end: e. g., pantomime, dancing, and singing games; (*b*) the game of skill in which the effort to accomplish some definite external result involves skilled action with varying degrees of physical strength and endurance: e. g., ball games and those requiring forms of marksmanship.

While many games require only the independent action of the individual player, there are a large number, on the other hand, which depend for success upon co-operative group action, upon "team work." Each type of games has its own peculiar advantages and is adapted to certain ages and classes of children.

The dramatic game is most acceptable and useful to children in the kindergarten and the first two elementary grades.

The games which prominently involve individual power and competition are best suited to children from eight to twelve years of age. The group and co-operative elements in games are valuable features for pupils in the later grammar grades and high school, and also, of course, for college students. During the period of adolescence the dramatic and individual elements are not eliminated but they lose their relative prominence as the social and co-operative qualities become more pronounced.

[7] "Play as a Factor in Development," *American Physical Education Review*, December, 1897.

Many games may be played with enthusiasm in all of the first five or six elementary grades, but the game under the same name will develop in complexity and difficulty as the children grow older and gain interest in increasing ability and technical skill.

GAMES SUGGESTED FOR SCHOOL USE

Grade I

Running games—
- Drop the Handkerchief
- Cat and Mouse
- "Come Follow Me"
- Cat and Mice
- Garden Scamp
- "I Saw"
- The Boiler Burst
- Follow the Leader
- Claps

Dramatic games (constructed by class), as—
- Train games
- Fire-engine games
- Fairy game
- Squirrel game, etc.

Singing Games, as—
- Swinging Song—A. L. Stevenson
- Folk Games and Dances—C. Crawford
- Swedish Song Plays—Bolin
- Singing Games—Eleanor Willard

Grade II
- Drop the Handkerchief
- Cat and Mouse
- Cat and Mice
- "Come Follow Me"
- "Have You Seen My Sheep?"
- Garden Scamp
- "I Saw"
- The Boiler Burst
- Follow the Leader
- Claps
- Black Man
- Single Relay Races—simple form—individual against individual—score by points
- Folk games, as "Shoemaker"

GRADE III

Drop the Handkerchief
Cat and Mouse
Herr Slap Jack
"Have You Seen My Sheep?"
French Blind Man's Buff
Blind Man's Buff with wand
Steps
Sheepfold
The Boiler Burst
Wolf and Shepherdess (or Fox and Geese)
Follow the Leader
Claps
Tommy Tiddler's Ground (Kingsland)
Stealing Sticks
Black Man
Single Relays

GRADE IV

Cat and Mouse
Herr Slap Jack
"Have You Seen My Sheep?"
French Blind Man's Buff
Blind Man's Buff with wand
Steps
Bull in the Ring
Sheepfold
The Boiler Burst
House Hiring
Wolf and Shepherdess (or Fox and Geese)
Follow the Leader
Claps
Tommy Tiddler's Ground (Kingsland)
Stealing Sticks
Tame Fox
Hill Drill (or Pom-pom, Pull away)
Bound Hands
Black Man
Circle Tag
Three Deep
Relays (use of obstacles)

GRADE V

Cat and Mouse
Herr Slap Jack
"Have You Seen My Sheep?"
French Blind Man's Buff
Blind Man's Buff with wand
Steps
Bull in the Ring
Sheepfold
The Boiler Burst
House Hiring
Wolf and Shepherdess (or Fox and Geese)
Follow the Leader
Claps
Tommy Tiddler's Ground (Kingsland)
Stealing Sticks
Tame Fox
Hill Drill (or Pom-pom, Pull away)
Bound Hands
Black Man
Line Tag
Circle Tag
Three Deep
Relays { Single / Double } with obstacles
"All Up"
Duck on the Rock

DEVELOPMENT OF THE BALL GAME (THROUGH FIRST FIVE GRADES)

I. *Rolling Ball Games*

a) Children roll ball from one to another.

b) Roll with aim. Teacher in center of circle rolls ball to each child who then returns it.

c) French ball—one child in center of circle. Children attempt to roll ball from one to another across circle without having it caught by child in center, for if he catches it the player who touched it last must take the center place.

II. *Bouncing Ball Games*

a) Individual child practices bouncing ball and catching it.

b) Teacher in center bounces ball to each child who returns it in the same way.

c) Individual child practices throwing ball up and catching it on bounce.
d) One child in center of circle calls name of some other child and tosses ball in air. Child called must catch ball on one bounce.
e) Tossing ball up and catching without bounce.
f) (*d*) may be played without letting ball bounce.
g) Battle ball.

III. *Throwing or Passing Ball*

a) Teacher in center throws ball to each child who throws to her.
b) Touch ball may be played passing ball (instead of rolling).
c) Teacher (or Leader).
d) Dodge ball (moving goal).
e) Zigzag.
f) Battle ball (throwing ball).
g) Puss ball.
h) Medicine ball.
i) Stride ball.
j) Toss ball (overhead), relay.
k) Newcomb.
l) German bat ball.

ATHLETICS AND GAMES (FIFTH, SIXTH, AND SEVENTH GRADES)

Games in which the *individual* is alone concerned

Boys	Girls
Swimming	Swimming
Skating—ice and roller	Skating—ice and roller
Jumping	Running
Running	Archery
Fungos—batting flies	Battledoor and shuttlecock
Archery	Diabolo
Battledoor and shuttlecock	Rowing
Diabolo	Canoeing
Rowing	Tether ball
Canoeing	
Tether ball	

Group Games and Contests in which the *individual* is most prominent

Boys	Girls
Games of Tag	*Games of Tag*
1. Cross tag	1. Cross tag
2. Pull away	2. Pull away
3. Hang	3. Hang
4. Prisoner's base, etc.	4. Prisoner's base, etc.

Boys	Girls
Relay Races	*Relay Races*
Running	Running
Indian clubs	Indian clubs
Wrestling	
Ball Games	*Ball Games*
Screen ball	Center ball
Curtain ball	Curtain ball
Center ball	Dodge ball
Dodge ball	Stride ball
Stride ball	Zigzag ball, etc.
Zigzag ball, etc.	
Circle rope jumping	Circle rope jumping
Tennis	Tennis
Leapfrog	Leapfrog
Handball	Handball
Giant stride	Giant stride
Croquet	Croquet
Cross country *walks*	Cross country *walks*
Gardening, Nature-study	Gardening, Nature-study
Track and field events	

Events in which *Team Work* gradually becomes the essential feature

Boys	Girls
Baseball	Indoor baseball
Basket-ball	Basket-ball
Field hockey	Field hockey
Socker football	Cricket
Cricket	

ATHLETICS AND GAMES

High School

(In addition to preceding)

Boys	Girls
Baseball	Indoor baseball
Basket-ball	Basket-ball (girls' rules)
Field hockey	Field hockey
Ice hockey	Cricket
Cricket	Handball
LaCrosse	Swimming and diving
Socker football	50-yard dash
Rugby football	Hurdles
American football	Canoeing and rowing
Handball	Tennis
Swimming and diving	Billiards

Boys	Girls
Boxing	Golf
Track and field athletics	Bowling
Squash	
Canoeing and rowing	
Tennis	
Billiards	
Golf	
Bowling	

Basket-ball under proper restrictions is an admirable winter indoor game for both boys and girls. The rules of the game should be modified for the girls, as is the case in some schools. Girls should be protected by the rules from too violent jolting and jostling of the body and from covering in play more than one-third of the regulation floor area. For boys the rules of the Amateur Athletic Union should be used as these provide better than the present intercollegiate rules, for a limitation of undesirable features of play.

FOOTBALL

The value of football in the training of high-school boys, especially those of the large centers of population, is well recognized. No other game now played brings out so well the qualities of manliness, courage, daring; the willingness to sacrifice and subordinate self for the good of the whole; alertness; the ability to co-operate with others; quickness of judgment, and determination. Yet the sacrifice of twenty-nine lives and numerous serious accidents in one season all testify to the necessity of a radical reform, if the game is still to be played by the American boy.

It is comparatively easy to point out what ends or results are to be sought in the reorganization of the game, but exceedingly difficult to formulate the specific rules that will bring about the desired effects. Change must be made in the manner in which the game is supervised as well as in the actual playing rules.

Examples

1. The physical director of a prominent preparatory school stated, when between halves it was suggested that one of his "backs" was "all in," that he had given him two ounces of whiskey.

2. The coach of a prominent military academy is said to run what might be called a book-making establishment in which he urges his players to bet on the games.

3. One boy died of strychnine poisoning as a result of a hypodermic injection between halves (reported in newspaper).

Certain changes in football are evidently desirable while others have been suggested.

1. The rules provide for 35-minute halves which may be shortened by agreement between the two captains. Rarely is the full length of halves played, yet it would be better to put the maximum length at 15 or 20 minutes. After this length of time it becomes a matter of endurance and brute strength rather than skill.

2. Some regulation is necessary which will require the removal of a player who is manifestly in no condition to play. Not infrequently a player with slight concussion of the brain is allowed to continue in play. Possibly a rule necessitating the removal of a player, who asked or required time to be taken out for him, would meet this need. It is usually the player who has been repeatedly injured that at last receives the "fatal blow" (commonly reported in papers).

3. Modification of rules (now under discussion) so as to (*a*) protect the player better from injury; (*b*) do away with mass plays; (*c*) make game more open and provide for more free play.

It is most desirable that rules of play should be so devised that all the range of valuable qualities would be increased to the maximum while the elements of danger should be reduced to a minimum, if they cannot be eliminated.

TRACK AND FIELD ATHLETICS FOR HIGH SCHOOL BOYS

Track events of college athletics should be carefully controlled. Many high-school boys are injured for months, years, or for life by taking part in endurance races. There is no possible benefit from the long races to compensate for the harm that may result. High-school boys should not take part in races longer than 100 or 120 yards.

Hammer-throwing contest and tug of war should not be allowed. In shot-putting, the weight of shot should be limited to 8 or 12 pounds. Field athletics are suitable for boys, such as pole-vault, and long and high jumping on soft ground.

ATHLETICS FOR GIRLS

The typical outdoor athletic contests are not suitable for girls. Running races above 75 yards in length are distinctly objectionable.

Jumping should be very carefully controlled and should generally be restricted for adolescent girls. The developing reproductive organs, at this age, are easily subject to displacement. Many girls and young women have been seriously and permanently injured, in ways entirely avoidable, by participation in exercises too violent and taxing. Exercises for girls and women should be intelligently selected and adapted to their peculiar conditions and needs. With proper regulations, however, group games and contests are exceedingly valuable for girls.

Women, certainly as much as men, need to learn through practical experience the rules of fair play, generous treatment of rivals and opponents, merging of self in co-operative effort, concentration of power, and the bending of all energies toward an impersonal objective goal. A woman of direct experience and keen discernment has stated suggestive opinions regarding this phase of physical education in the following words:

There is no training which girls so much need as that which develops a sense of honor and loyalty to each other, and games will do more to really make these living qualities than the ethical systems taught in a college curriculum. It takes the finest kind of courage to be fair, to be honest, and to be loyal, and these are absolutely essential in good team work.

We may think that little vanities and jealousies and little unkind words or somewhat exaggerated statements have little harm in themselves; that bragging and snobbishness are perhaps pardonable under some conditions. Games try out these qualities and they appear in their exact proportion and in all their ugliness, devoid of the graces in which they are so often half hidden. A game is a well-nigh perfect democracy. Nothing is so good for the girl as to find that money, clothes, family, prestige, or "pull" are as nothing—that they do not help her to play good ball or make a team. She stands or falls absolutely by what she is and can do, and realizes that the game makes all equal, and that she may have to shake hands with a despised social rival on the field.

Some women are abnormally sensitive and introspective or morbid and live too much on the subjective side of life. The various ethical and religious cults which appeal primarily to the subjective self appeal largely to women. Sports are primarily objective, they afford no opportunity for analysis of feeling or consciousness of the process. The thought is upon the things to be done and not upon the doer. Every institution which provides opportunity for women's games is erecting a barrier against nervousness, morbidity and too much introspection.

The qualities which games develop are not essentially masculine, they are but human qualities needed for human fellowship, and I have yet to see a group of girls made masculine by holding these ideals before them, and where the spirit of the training is that which I have been trying to portray. I do not mean to say, of course, that every individual trait can be strengthened, every defect removed by game work, or that games alone can do this; but I do mean to say that organized sports for women, when put on a proper basis and under intelligent directors, will go a longer way toward training the faculties and moral instincts than many of the courses of instruction which are given the credit for doing this.[8]

The management of group athletics for high-school girls is rendered difficult by the fact that the girl should not take part in a vigorous game during the menstrual period. At just this time, not infrequently, her participation is needed as a member of a team. To guard against such a difficulty it is important to have several substitutes properly trained, or if this provision cannot be made, the game, however important, should be delayed rather than to allow any girl to run the risk of harm. The above and other reasons support the proposition that interschool or interinstitution athletic contests for girls are not as a rule advisable. If allowed under exceptional conditions they should be supervised with great care. Interclass games within the school can be more safely administered.

Originality and ingenuity in adaptation of games for high-school and college girls will bring about great improvement in this field of physical education.

In one eastern college for women, by the construction of implements of suitable weight, enjoyable and beneficial contests have been devised: discus throwing (with 4-pound discus); stilt race—20 yards; torch race—20 yards; javelin throwing; hurdle race—30 yards.

SWIMMING

Swimming is a valuable form of exercise for boys and girls and an accomplishment attended with many beneficial results, not only in strength and grace of body, but also in self-control and confidence in one's ability to do things in unaccustomed surroundings. In connection with the ability to swim, it is most advantageous that

[8] Kellor, *Ethical Value of Games for Women*

every boy or girl, at least of high-school age, should be taught how to assist a disabled person in the water, and also to resuscitate a drowning person. Such training has very genuine mental and moral value and through it the emphasis upon the principle of mutual helpfulness exemplifies the idea of social interest which it is important that the young adolescent should get at an early stage. Swimming is a valuable feature in physical education. Recently a regulation has been put into effect in Boston requiring that all high-school girls as well as boys shall learn to swim.

DANCING

Dancing is considered by some authorities the best of all forms of exercise. A prominent nerve specialist has recently stated his belief that dancing is the most perfect of all exercises, particularly because of its beneficial effect upon the nervous system. It has come into prominence within the last few years through the revival of folk and national dancing in this country and Europe.

In the wealth of dance forms coming from many nations, and because the dance is related to so many different interests and kinds of expression, there are almost unlimited possibilities in the adaptation of dances to children of different ages. It is desirable that in the education of boys and girls dancing should not be solely a pleasurable form of movement, though this would often be worth while in itself, but when the dance is used as a form of expression of worthy ideas and feelings, through the correlation of art, music, history, and literature with the dance, its indirect value is widely extended without its hygienic and recreative benefits being in any way lost.

Through the selection and adaptation of types of dancing to the different stages of development and mental interest of children and youth, dancing may become a very prominent factor in the physical education of the young.

MARCHING

Marching of the traditional military type has been much used in the gymnasium. It is an excellent form of drill in precise movement, whose utility finds application in the orderly movement of pupils through school corridors and transit from room to room, and in the very practical and important fire drill. It has other useful

possibilities which have not yet been much developed. In evolutions and formations, more flexible and less rigid than the soldier type, much variety and interest may be added to these squad and class evolutions. The arrangement of geometric and art figures, of different designs, suggested in flag formations and the like, aided by the color effects of special costume, will indicate some of the modifications which may be suggested.

Physical education should utilize exercises which are natural, interesting, and enjoyable, and which, in unconscious fashion, accomplish the desired ends of this fundamental motor training.

CONCLUSIONS

I. That these different aspects of health care in education are vitally related to each other.

II. That the conditions affecting the child are so arranged that the responsibility for the health care of the pupil must be divided with varying distribution of duties between the following: parent, family physician, teacher, principal, school physician (sometimes school nurse), and teacher of physical education.

III. That there should be sympathetic and close co-operation between home and school forces for the conservation and improvement of the child's health.

IV. That all of the school officials, beginning with the teacher and principal or superintendent, must meet his or her full share of responsibility in relation to the health of pupils, if this work is to be well done.

V. That the desirable balance and unity of the five phases of school supervision and teaching which affect the pupils' health renders necessary beyond the service of teacher or principal a co-ordination of functions which should be centered in a supervisor of health or hygiene in the schools.

VI. That each state should have a supervisor of school hygiene; and each city of sufficient size, and each county in the rural districts, should have a local supervisor of school hygiene.

VII. That such a supervisor should have a broad and thorough general and technical training to perform his duties successfully.

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CONSTITUTION

(Revision proposed by the Executive Committee)

ART. I. *Name.*—The name of this Society shall be "National Society for the Study of Education."

ART. II. *Object.*—Its purpose is to carry on the investigation and to promote the discussion of educational problems.

ART. III. *Membership.*—Sec. 1. There shall be three classes of members, active, associate, and honorary.

Sec. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership.

Sec. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

Sec. 4. Associate members shall receive the publications of the Society and may attend its meetings, but shall not be entitled to hold office, to vote, nor to take part in discussion.

Sec. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination of the Executive Committee.

Sec. 6. The names of the active and honorary members shall be printed in the *Yearbook*.

Sec. 7. The annual dues for active members shall be $3.00, and for associate members $1.00.

ART. IV. *Officers and Committees.*—Sec. 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an executive committee, and a board of trustees.

Sec. 2. The Executive Committee shall consist of the president and four other members of the Society.

Sec. 3. The president and vice-president and secretary-treasurer shall serve for a term of one year. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

Sec. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook*.

Sec. 5. The Board of Trustees shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society and make an annual financial report.

Sec. 6. The method of electing officers shall be determined by the society.

ART. V. *Publications.*—The Society shall publish *The Yearbook of the National Society for the Study of Education,* and such supplements as the Executive Committee may provide for.

ART. VI. *Meetings.*—The Society shall hold its annual meeting at the time and place of the meeting of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ART. VII. *Amendments.*—This Constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

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THE NINTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART II

THE NURSE IN EDUCATION

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SUPPLEMENT TO THE YEARBOOK ON "HEALTH AND EDUCATION" DISCUSSED AT THE INDIANAPOLIS MEETING OF THE NATIONAL SOCIETY
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PREFACE

The purpose in this second part of the *Ninth Yearbook* is to present a brief survey of the entrance into the work of public education of the professionally trained nurse; to bring together some of the important results already attained in this field; to indicate the scope and possibilities of the work of this educational nurse; to suggest the relationship of the nurse to the school and community, and to indicate the co-ordination of the nurse's work with that of parent, regular teacher, school physician, teacher of physical education, and other special teachers whose particular subjects bring them into relation with the health side of education. Valuable help and guidance have been given in the preparation of this report by Professor Henry Suzzallo.

INTRODUCTION

THOMAS D. WOOD

The most important of all the nation's resources is the health of the people.

The most valuable asset in this capital of national vitality is the health of the children.

The public school is the most effective agency of the nation for the conservation of child health and in the long run the school will become the most influential factor in the conservation of national health as a whole.

In the past the schools, even under most favorable circumstances, have been to some degree at least disadvantageous, and frequently directly dangerous to the health of children.

Some of the factors inseparable from present school conditions, notably the confinement of children in the schoolroom; and the segregation of pupils, with consequent communication and distribution of unrecognized infection, present health difficulties whose solution will tax all the resources which knowledge and money may render available.

The problems which have arisen out of the great health movement of the present day are many and varied. Many of the most important of these are related directly and indirectly to the work of public education. Some of these problems formulate themselves as follows:

a) What may the schools do to insure the best possible physical state of the pupil in order that he may be in the most favorable condition for the educational process?

b) How may all the school conditions in the environment, the implements and processes of education, be made salutary and healthful in their effects upon the pupil?

c) What materials and methods shall be utilized to inculcate in the child practical motives and habits of healthful living, and to provide instruction adequate for the present and future needs of the pupil in relation to conduct affecting the health of the individual, the home, the community, and the nation?

As in the history of public hygiene, so in the development of school

hygiene, the first step was to prevent and control the spread of communicable disease. To assist teacher and principal by providing professional skill for the problem; to co-ordinate the work of school hygiene and public health, provision has been made variously and in different places for the school physician or medical inspector.

This movement of medical inspection of schools has spread in desultory fashion through many of the larger and a few of the smaller cities throughout the country, without uniformity, but in a way to typify a method of organization suitable to a serious situation. However, between the essential limitations of the knowledge of teacher and principal on the one hand, and of the time of the school physician on the other, a striking and significant hiatus has arisen, so far as the vital needs of the child are concerned. To bridge this gap which the recent discoveries in medical science have made more striking and apparent within the last few years, the school nurse has come into being.

The introduction of the graduate nurse into public education has been rapid and dramatic. No innovation in the schools has ever met, probably, with such instant and spontaneous support and approbation. Little time will be required to convince most school authorities of the wisdom of expenditure involved in the cost of the school nurse. Not only has the nurse more than fulfilled expectations regarding the professional services which she was specifically appointed to render, but she has rapidly developed forms of hygienic service, social and educational, to pupil, home, school, and community, which have naturally grown out of the wonderful opportunities inherent in her work. Moreover, her achievements almost from the beginning have demonstrated the extraordinary value and significance, not only of the direct but the indirect and incidental features of this new field of service.

Prominent among the results already accomplished by capable nurses in this field are the following:

a) Detecting early signs of communicable disease among school children, many of which would otherwise be overlooked altogether or until the disease, if severe, would have become more pronounced with much more extensive infection of fellow-pupils.

This early detection of disease symptoms results variously in:

1. Marked reduction in the number of cases of infectious disease due to segregation, with consequent actual saving of child life and reduction of school child mortality.

2. Early treatment of disease, with frequent lessening of danger and severity of the disease.

b) Treatment in school of minor accidents and ailments and of mild cases of local infection under medical direction, with consequent reduction to a minimum of educational loss due to exclusion from school for various forms of injury and disease.

c) Instruction of mother in the care of the child, in the health of the household, and in manifold aspects of the life of the family, with consequent benefit to the community.

d) Supervision of sanitary conditions of the school.

e) Health guidance and instruction given to individuals and groups, according to local conditions, and the opportunities afforded.

While certain aspects of the work of the nurse in the school will be made uniform by formal regulation and accumulating tradition, still many of the most valuable features here must depend upon local need and circumstances; upon personality, skill, and tact of the individual nurse.

On the side of her work which involves prevention, detection, and care of disease, the nurse becomes the skilled helper of the school doctor, public health officer, and family physician.

In aspects of school administration she must act as assistant of school superintendent and principal. Where her work touches that of regular and special teachers in the school, intelligent and sympathetic co-operation is required.

In her contact with the home, wisdom, tact, and fine judgment are needed in order that information, suggestion, and inspiration may be furnished in a way to incite to better standards of living and a finer conduct of individual, home, and community. So far as the welfare of the child is concerned, such an adjustment and co-ordination of forces and persons are required as to permit no needless and wasteful overlapping of factors in the mosaic of influences intended for the protection and training of the child, and at the same time to leave no gap in this composite of forces which will result in neglect or injury.

The school nurse comes into the field of education to fill an important gap in the protection of the child's health and to supplement in various ways the sum of the influences intended for the improvement of individual, home, school, and community life. It is very evident that if

the school or district nurse is to be sufficient not only for strictly professional duties, but for the broader and indirect opportunities of her calling, this field of effort must command the finest type of womanhood in respect to understanding, sympathy, sound judgment, and practical tact in dealing with the manifold problems which she will meet. While some of the best elements of this nurse's ability can arise only from actual experience, yet a new, comprehensive, and varied type of training must be developed to supplement the technical education of the nurse and to prepare her as well as may be possible for this new vocation.

Closely related in certain respects to this profession of the educational nurse is the field of service and responsibility which must be developed in the near future for the woman who is fitted to take professional care of the infant and the "runabout" child below the kindergarten age. While most of the practical care of the baby relates to his physical life and needs, yet the mental and moral education of the child begins from the time of birth. Vital foundations of intellect, personality, and character are laid in the cradle and in the nursery. The simplest reactions of the central nervous system in infancy, and many of the early habits involved in the physical beginnings of life, form the germs of education and are of great potency in the determination of the final characteristics of the individual.

The most important part of education in some respects occurs before the child is old enough to enter the kindergarten or the school. The early care of the baby should be intrusted to a woman who not only is qualified to give the physical care required, but who is able to watch and guard the child with appreciation of the significance of all the factors at this first stage of development in relation to his future well-being.

The nurse-maid of the present is generally inadequate and incompetent. Her position in the family and in society is entirely beneath the right and dignity of a woman qualified to do this important work. The demand for well-educated women in this field will come naturally from the homes of the wealthy and well-to-do, where the conscientious, devoted care of the young is so often lacking.

Here, then, is the prospect of another new skilled profession for women which will call for as high a type as the fields of teaching and nursing. Provision must be made in the near future for the comprehensive training of children's nurses who shall be qualified to care for

the physical, intellectual, and moral beginnings of child development. The development of this field must, in time, influence favorably the standards of mother care in all types of society. These phases of nursing affecting the infant, runabout, and school child will help fill some of the glaring gaps of the present in the complete human nurture of the young.

THE EDUCATIONAL VALUE OF THE NURSE IN THE PUBLIC SCHOOL

ISABEL M. STEWART
with the co-operation of
M. ADELAIDE NUTTING

It is a significant sign of the times that so much attention is being paid to the health of school children. Medical societies, sanitarians, and public-health officials are concerning themselves seriously with the physical defects of children and with the spread of contagious diseases through the schools. Economists are accumulating a great body of statistics to show the enormous wastage of human life through the diseases of infancy and childhood, and the economic loss to the nation from this mortality, as well as from the serious weakening in efficiency and earning power, due to preventable and remediable defects. Philanthropic and charitable societies are concerning themselves chiefly with the social and moral aspects of the problem. The economic and industrial situation is complicated by the terrible prevalence of ignorance, due to the lack of proper teaching somewhere. The schools cannot evade some of the responsibility. Educationalists have always maintained the importance of the healthy body as a basis for the educational process, but they are just beginning to realize how large a factor the school itself is, in manufacturing defects, and in propagating disease in the community.

THE PROBLEM

It seems so obvious as to require no argument, that children in ill health should have attention, that the health of well children should be protected and conserved, that defects which interfere with mental development should be treated and, so far as possible, cured, that the school environment and educational method should at least not contribute to ill health. It is being stated freely that the evils of child labor are not all the results of commercial exploitation, that the crowded classrooms in some of our cities are close competitors with the cotton mills of the South, and that "our buildings, our curricula, our home study, are manufacturing more defects than the physician and nurse

and dispensary can correct."[1] The Committee on the Physical Welfare of School Children in New York[2] found that 66 per cent needed medical or surgical attention or better nourishment; 40 per cent needed dental care; 38 per cent had enlarged glands of the neck; 31 per cent had defective hearing; 18 per cent had enlarged tonsils. These defects are not confined to the very poor, nor to the children of immigrant parents. Such statistics are before the public and are well known to educationalists. They have been fully presented to this Society in the first part of the *Ninth Yearbook*. In most enlightened communities boards of education and boards of health have combined to investigate conditions and to demonstrate the need of better sanitation, better teaching of hygiene, and medical treatment for these seriously handicapped children.

The medical inspector himself cannot do much to bring about better conditions. He must not even treat the children except for minor ailments. All he can do is to report what he finds, to exclude those children who are a menace to others, and to agitate for something to be done. It seems impossible any longer to fix the responsibility for the child's health exclusively on the parents. Because of ignorance, or poverty, or inefficiency in the home; because of the large proportion of the foreign element in our population, the employment of mothers in industry, the increasing congestion in cities, and the consequent overcrowding of classrooms, the school is compelled to take over many of the functions which formerly devolved on the home. There is thus an increasing accumulation of school functions relating to health. These may be cited briefly:

a) Sanitary inspection of school buildings, systems of ventilation, etc., with special attention to the daily cleaning and the disinfection of schoolrooms and lavatories.

b) Medical inspection for detection of contagious diseases and physical defects.

c) Personal health examination.

d) Hygiene of instruction.

e) Emergency service and treatment of minor chronic complaints.

[1] *Ninth Yearbook*, 52.

[2] Professor Irving Fisher, *Report on National Vitality*, 74.

f) Instruction of children in personal, home, and community hygiene and sanitation, and the practical application of the laws of health.

g) Instruction of, and co-operation with, parents.

h) Physical education.

METHODS OF DEALING WITH THE PROBLEM

It is perfectly evident that the existing organization is powerless to handle all these varied phases of the health problem. As a matter of fact the teaching staff is already so overloaded with duties that it could not seriously undertake more. But even where some attempt is being made to cover the field, it fails in effectiveness because of the lack of co-ordination of the various forces engaged. For instance, in the question of personal hygiene, four or five different instructors are already teaching the subject in different ways and from various standpoints—the regular teacher, the domestic science teacher, the supervisor of physical education, the special teacher of nature-study or biology, the school doctor, and if there is one, the school nurse. Yet, with some excellent exceptions, the subject is notoriously slighted, and there is little practical application of the principles of hygiene to everyday living.

Dr. William H. Allen says:

> The teachers themselves, especially in the higher grades, are the first to acknowledge that they have no adequate training for the work, and are not themselves very correctly informed on questions relating to even sanitation and personal hygiene, and less on such subjects as the nature and control of infectious diseases, the prevention of tuberculosis, etc.[1]

and again:

> Superintendent Maxwell of New York City, and other educational leaders, urge teachers to do their utmost to learn the physical conditions and home environment of the individual child and to fit school treatment to the individual possibilities and handicaps. But experience proves conclusively that, try as they will, teachers and principals have neither the special knowledge nor the time to acquire the special knowledge to use the facts disclosed by the physical examination of school children.

Professor Irving Fisher[2] points out very clearly that in respect to school hygiene, it is not so much lack of knowledge, as lack of applica-

[1] *Civics and Health*, 286.

[2] *Report of National Vitality*, chap. ix, "Conservation through Personal Hygiene."

tion of knowledge, which is at fault. To be effective, this application must be made largely in the home where the trouble arises, and here is where the whole difficulty lies. The teacher or the specialist cannot be asked to take on the function of health visitor and sanitary instructor in the home.

There is then a very evident need for some organized expert agency within the school system, to co-ordinate these various offices connected with the health of the school child. This is not a new idea in education. Boards of education have already appointed trained specialists for the teaching of art, manual training, music, physical education, domestic science, etc. Why should we not have supervisors of health in the schools?

The difficulty is in securing the right type of specialist for such a varied line of activities. Dr. Snedden, in advocating such a system, says:

> It should be noted that at present there are hardly anywhere men and women who can be put in charge of this work of educational hygiene, for men skilled in medical science alone cannot do it, nor can men who are only teachers. It requires a combination of the results of both kinds of training—in fact, a new field of applied science. But if the demand is once created, gradually a supply of trained workers will be available, for the field offered is certainly attractive to all who incline toward sanitation and preventative medical practice.[1]

In the meantime we must look to those who are already in the field and try to determine which of the many types of specialist might best be intrusted with the present situation. We have already a very few specially trained physicians who combine a thorough knowledge of disease, its prevention and treatment, with a training in physical education and a knowledge of educational psychology and sociology. Such a person would undoubtedly be the one to direct and co-ordinate all the functions outlined.

For that part of the work which concerns itself specially with the prevention and treatment of diseases, it would seem that a very satisfactory basis would be found in the co-operation of specially trained physicians and nurses in a well-organized, adequately supported system of medical inspection in the schools. The history of the movement most significantly demonstrates the effectiveness of such a combination

[1] *Report of International Congress on Tuberculosis*, Vol. III.

wherever it has been tried, but its full possibilites have not really been tested. While acknowledging the control of the medical officers in everything that pertains to diagnosis and individual treatment, I wish to show that the nurse has a field here which is peculiarly her own; that she accomplishes through her close personal contact with the child and the home something which has not been accomplished in other ways; that she is a social, an educational, and an economic factor of great significance in this movement; and that an extension of her work would greatly increase the efficiency of the public school.

HISTORY AND DEVELOPMENT OF SCHOOL NURSING

Germany.—The development of the system of medical inspection in Germany has been fully discussed in Part I of the *Ninth Yearbook*. It will be noted that the duties of the school physician include such details as the inspection of buildings and playgrounds, lighting, heating, ventilation, choice of desks, and the hygiene of instruction, as well as the thorough and regular physical examination of the school children under his care.

The results of these examinations are reported quite fully to the parents, and if necessary the pupil is excluded until treatment is given. German parents evidently take their duties a little more seriously than either English or American parents, for there seems to be no serious trouble in securing their interest and co-operation in the treatment of defects or disabilities. In some cities a fine is charged for every day of non-attendance, where this is due to carelessness or negligence on the part of the parents. No attempt is made to treat the children in the school, or to follow them to their homes. Indeed the family physicians strenuously oppose any suggestion of treatment on the part of the school physicians. Their work with the children is confined to the investigation, diagnosis, and reporting of abnormal conditions and the exclusion of contagious disease. The poorer children are referred to dispensaries and clinics for treatment. As a rule the school physician has from 2,000 to 3,000 children under his care, and gives his services for a part of the day only, at a salary of from $125 to $200 per year. The teachers assist in the routine measurements and are taught to detect the common diseases of childhood. So far as can be gathered from reports, nurses have never been employed in the German system, nor in the continental schools generally. Yet it is stated "that out of

35,000 children examined for admission to school in Berlin in 1905, no less than 3,000 were rejected and sent back home, and 7,600 were put under special medical treatment."[1] It would seem that there is room for some home instruction even in Germany. Probably one reason why nurses have such limited opportunities there is because the nursing schools are largely under the domination of the religious authorities and have had less opportunity for development.

Great Britain.—In the International Congress of Hygiene and Demography in 1891, Dr. Malcolm Morris advocated the employment of a staff of specially educated nurses to visit the public elementary schools and inspect the children. This seems to be the first public suggestion of such a plan.

In England the work of school nursing preceded medical inspection in the present accepted sense. There was indeed one permanent medical officer in the city of London whose duty it was "to sit up in the central office and collect statistics."[2] In 1894 the managers of a school in a very poor district of London asked a district nurse to visit the school and do what she could to relieve the small ills of the children. Her work was found to be very beneficial, and was brought to the notice of one of the members of the London School Board, Miss Honnor Morten, herself a nurse and a prominent social worker and therefore better able perhaps to appreciate what was being done. No organized movement was made till 1898 when a voluntary "School Nurses' Society" was founded with the object of supplying visiting nursing to elementary schools in poor districts. Three nurses were appointed, each with four schools under her care. They treated the children sent to them by the teachers, followed the worst cases to their homes, secured medical attendance for those who required it, and everywhere taught and demonstrated the principles of cleanliness and simple hygiene. In one of its reports the School Nurses' Society briefly describes its purpose:

> It must be remembered that the sore heel soon becomes poisoned if left to London dirt, and that the inflamed eyes often lose the power of seeing, simply through neglect. There is no more sure way of securing the health of the people than to arrest small ills at the beginning. A nurse can see at

[1] Dr. Frederick Rose, *International Congress of Nurses* (London); reported in *British Journal of Nursing* (November 20, 1909).

[2] Honnor Morten, "The London Public School Nurse," *American Journal of Nursing* (January, 1901).

a glance whether a child should be sent to a doctor, she can impress cleanliness, she can follow up bad cases to their homes, she can recognize the early symptoms of fevers and do much to stop the spread of infectious diseases that so often devastate our schools.[1]

It was found that cases of bad eyes and dirty heads were practically stamped out of school by six months of regular visiting. The funds to pay the nurses and provide dressings were raised by voluntary subscription, and as soon as finances permitted, extra nurses were added to the staff. Efforts were made to interest the authorities and secure their co-operation. Through Miss Morten and Lord Breay, members both of the School Board and of the School Nurses' Society, permission had been granted in the beginning, on the express stipulation that no expenditure should be entailed in carrying out the experiment. Later the board graciously consented to provide a basin and kettle for the use of the nurse in each school, with the proviso that the outlay should not exceed three shillings for the two articles.[2]

Everywhere the same story was told of the schools—that they were centers of contagion, especially for such evils as pediculi and ringworm. A specially virulent form of ringworm having broken out in the London schools in 1900, the School Board cautiously appointed one nurse, at a salary of seventy pounds a year, to inspect the children's heads. There were three and one-half million children attending these schools.[3]

On the appointment of an active and intelligent physician (Dr. Kerr) as medical officer to the London School Board, the whole terrible condition of the children in the schools came before the public. In 1904 the work of the School Board was taken over by the London County Council and put under a progressive management. The London School Nurses' Society, having demonstrated the value of the nurses' services in the school for five years, now applied to the council to have the system taken over and supported by municipal funds. This was done and the staff of nurses was increased to twelve and later to fifty. But the character of the work, as determined by the County Council, was altered, so that the nurses were obliged to restrict their duties merely to reporting, excluding, and giving cards of instruction. Thus

[1] Honnor Morten, "School Nurses in England," *Charities and the Commons* (April 7, 1906).

[2] *School Board of London Gazette* (February 27, 1900).

[3] Honnor Morten. See p. 19, n. 2, and n. 1, above.

the nurse is simply an inspector, and her work is robbed of its prime significance by the elimination of the *actual* nursing treatment, and the home visiting with its resulting educational benefits.

The example of London was speedily followed by Liverpool, Birmingham, and other big towns, and although some of them have secured municipal aid for their nursing staff, in many cases they are still paid by voluntary agencies. The effectiveness of medical inspection is proven to be dependent on the thoroughness and regularity of the doctor's visits, and the character of his work, but more than all on the co-operation of an efficient nursing staff.

Dr. Hayward, of Wimbledon, England, in his very interesting address given before the Jubilee Congress of District Nursing held in Liverpool, May, 1909, gives a vivid picture of the helplessness of a doctor working alone in a school. He says:

> As a doctor I felt quite stranded in the strange atmosphere of an elementary school, coming into contact, not so much with actual illness, as with the primary conditions which produce and foster it. Dirt, neglect, improper feeding, malnutrition, insufficient clothing, suppurating ears, defective sight, verminous conditions, the impossibility of getting adequate information from the children or a knowledge of their home conditions; and nobody to whom one could give directions or who could help in examining the children. The only means of approaching the parents was to send an official notice that such or such a condition required treatment. My duties began and ended with endless notifications, and there it all stopped, as very little notice was taken of them.[1]

United States.—It was from the work in London that the suggestion came for a nursing staff in the schools of New York. In 1897 one hundred and fifty medical inspectors had been appointed by the Board of Health to visit the schools each day, and inspect all children sent to them by the teachers. The great object was to safeguard the health in the schools by excluding those affected with contagious diseases. The first year 108,628 examinations were made and 6,829 children were excluded on account of some defect or contagion. In 1902 the exclusions had risen to 17,986. At the beginning of the school term it was said that from 15 to 20 children were excluded daily and sometimes as many as 300 out of a single school were out at one time. There was a protest from teachers and parents. Visitors from the settlements

[1] Quoted in *Visiting Nurses' Quarterly* (Cleveland, April, 1910).

found the excluded children playing on the streets with other children. The cards which had been given them were lost or thrown away; or the parents, failing to understand the meaning of the scientific names or the directions on the card, and unable to appreciate the purpose of the whole thing, simply did nothing. Miss Lillian Wald, head worker of the Henry Street Nurses' Settlement, who had followed the work of the school nurses in England, drew the attention of the Board of Health to this very serious condition of affairs and offered to place one of her staff of visiting nurses in the schools for an experiment of one month. The work of Miss Lina L. Rogers was a convincing demonstration of the value of the trained nurse in the public school.[1] Wherever it was possible she treated the child in the school and thus saved many unnecessary exclusions. The work was approved by Dr. Lederle, the commissioner of health, and by Mr. Burlingham of the Department of Education. In 1903, at the request of the Board of Health, $30,000 was appropriated to extend the nursing service and put it on a definite basis. This provided a staff of 27 nurses at $900 per year. These nurses attended 125 local and 4 parochial schools, with an attendance of 219,239 pupils. Under the new system the number excluded for the month of September, 1903, was 1,101, as compared with 10,567 for the same month in 1902. Since that time the New York staff has been increased to 141 nurses, including supervisors, all giving their entire time to the work.

Dr. Cronin of New York maintains that in a school population of 650,000, 30 per cent of the children were from 1 to 2 years behind their proper class. Of these backward children 95 per cent were so principally because of defects of eye, ear, nose, or throat, which could easily have been detected and remedied through effective medical inspection.[2] From the work of the school nurses he testified that "exclusion has been reduced 99 per cent, thus saving the city large sums of money and annulling all the obnoxious features of wholesale exclusion which, if continued, would contribute to truancy and illiteracy."[3]

[1] Lina L. Rogers, "School Nursing in New York City," *American Journal of Nursing* (March, 1903); "Nurses in the Public Schools of New York City," *Charities and the Commons* (April 7, 1906).

[2] *Report on National Vitality*, 73.

[3] "Medical Treatment at School," *Report of Second International Congress of School Hygiene* (London).

It is stated[1] that when the child takes ten years to complete work which should take but eight, the cost of education is increased 25 per cent. It would thus be possible to work out on an economic basis alone the strongest possible argument for the employment of school nurses.

Under Dr. Darlington, the nursing service in New York was extended and further organized. He is unqualified in his commendation of the work as a supplement to medical inspection.

The present method of the medical inspection and examination of school children is noteworthy, for the practice of not only examining each child for physical abnormalities but for the method whereby the parents' attention is called to the presence of the defect, and repeated home visits are made by the nurses to explain and urge the necessity of treatment. During the school year of 1908–9, 323,344 children were examined; 242,048 were found to be suffering from some non-contagious physical defect. Of this number 203,488, or 84.06 per cent, were placed under treatment.

In contrast to that I might say that until this last year, the practice was to send a postal card to each parent with return postage. We had only two per cent of these cards returned, and we found that six per cent of the children underwent treatment until this last school year. Now 84 per cent are put under treatment. They are not treated by the Health Department, but by the clinics or family physician; the attention of the family is called to the trouble.

This result was made possible by the effective work performed by the nursing staff, and illustrates forcibly the value of individual contact in educational work of this nature.[2]

Miss Rogers, who was for some years director of school nursing in New York, reports:

The principals tell us that the condition in the school is 100 per cent better, and that the attendance has increased 75 per cent. What better demonstration can be given of the importance of keeping the children in good physical condition, to insure a proper frame of mind to receive the knowledge so freely imparted in the schools?

Again from the paper by J. A. Kalb, I quote:

A study of 1,400 children in New York was begun in the summer of 1906. These children had been reported as needing medical, dental, or ocular care, or better nourishment.

[1] J. A. Kalb, *Hygiene and Medicine in Relation to the School* (Columbia University thesis).

[2] *Woman's Municipal League Bulletin* (New York, January, 1910).

The futility of a physical examination without further action to insure medical treatment or hygienic environment was clearly demonstrated by re-examination in the spring. In the major number of instances these children were found to be worse than the first. Unless the work is followed up, no sufficient improvement will be made. The home conditions in so many cases are appalling, due to insufficient light, ventilation, and poor food.

The experience of New York in the matter of exclusions has been repeated in many other cities. According to Dr. Newmayer of Philadelphia:

In a school population of 157,500, the number of examinations made in April, May, June, and September, 1904, was over 700,000. Those excluded for contagious disease were 7,600. If school nurses had been provided, 7,000 of these could have remained at school, or lost but a short time.

Jane Addams sums the matter up in an address on "The Visiting Nurse and the Public Schools":

The best of medical inspection succeeds only in sending the child home; they say that such and such a child would have a bad effect on the other children, and therefore he is sent back to the family physician for treatment. In most cases a family physician is not called in, because, in the words of Artemus Ward, "there ain't none," and therefore the child is kept out indefinitely, and the public school, so far as that child is concerned, is doing nothing, and the child continues to play in the alley and on the streets or sit in the doors of the tenement with the rest of them.

This is the whole idea—that medical inspection was succeeded and almost transposed by the addition of the visiting nurses. The medical inspection got the child out of school, and the visiting nurse got the child back. It seems almost foolish to have medical inspection without the visiting nurse. Not that we would abandon the medical inspection; in no sense are they rivals, and in no sense is the nurse to make a diagnosis, but one without the other is insufficient and not to be tolerated. I am sure that here in Chicago we are working toward the nurses in the schools. We had them for one halcyon ten weeks, but owing to lack of funds and political difficulties, the ten weeks were all we were able to get.[1]

This is the economic aspect of the nurse's work. There is another view of it from the public-health standpoint. Miss Lina L. Rogers says:

Possibly the most important of direct results and the most far-reaching came from the visiting of the homes, where the most unsanitary conditions

[1] *American Journal of Nursing* (1908).

were discovered: An entire family using the same towel where a child was excluded from school with contagious eye trouble; cases where the child sent home with a severe form of scabies was helping to finish and carry bundles of sweat-shop clothing; filthy yards where delicate children played; patients in the last stages of consumption, living and sleeping in the same room with the family.[1]

From November 1, 1903, to May 12, 1904, 891 cases of contagious disease that had not been reported to the Board of Health were discovered in the homes by the school nurses.

Dr. Thomas F. Harrington, of Boston, makes a point of this in speaking of the prevention of tuberculosis:

> The school nurse has opportunities to find the chronically ill which are not afforded to the district nurse, the dispensary nurse, nor to the social worker. All of these enter the homes after the case of tuberculosis has been discovered or reported. The school nurse, on the other hand, enters the home as the friend of the children, and there finds often the advanced case of tuberculosis, which otherwise would have gone unrecognized and unreported until death. When I tell you that the thirty school nurses in the Department of School Hygiene of Boston have visited 22,000 homes of school children during the past year, some magnitude of the opportunities afforded in this line may be imagined. I would urge that the greater part of our efforts against the spread of tuberculosis be directed toward the finding and the segregation of the advanced and the incurable cases of this disease. Here lies, I believe, the greatest hope for the future.[2]

Los Angeles was the second city in the United States to adopt the new plan. The work was begun by the Visiting Nurse Society and taken over by the city, three nurses being appointed for eighty schools.

In Seattle two nurses in six months visited 265 schools, inspected 15,947 pupils, and made 1,070 home visits; 1,452 children were treated for small ailments and cured, 947 improved, and 1,217 were still under treatment. 1,886 cases were reported to the medical inspectors, 397 children were operated on for the removal of tonsils and adenoids, 294 fitted with glasses, and out of 461 cases of pediculosis, 416 were cleaned up. The nurses took 28 needy children to physicians or orthopedic hospitals to be cared for.

In San Francisco in 1904, Miss Elizabeth Ashe and Miss Daisy

[1] *Charities and the Commons* (April 7, 1906), 69.

[2] *Report of the International Congress on Tuberculosis* (Washington, 1908), III, 584.

Johnston from the nurses' settlement worked for six months without remuneration, in the hope of convincing either the health or the education authorities of the necessity of some kind of medical inspection in the schools. They got no verbal or written acknowledgment of their services from either body, but were more than repaid by the appreciation of the teachers and children and the improved health and attendance of the latter. When the Board of Health put physicians in the schools, the nurses withdrew, owing to the complete lack of interest exhibited by the authorities. School nursing was however established in 1908 with a staff of five nurses.[1]

In Chicago, Detroit, Philadelphia, Grand Rapids, Washington, Seattle, and other cities the work was begun voluntarily by the local visiting nursing associations, and later taken over more or less completely by the Board of Education or the Board of Health. In Philadelphia, Miss Anna Stanley has done rare pioneer work in the interests of school nursing. The Visiting Nurse Society offered her services and she was detailed to four downtown schools. Through her efforts, in four months contagious skin diseases were eradicated from these schools, and filth conditions were greatly reduced. Dr. Newmayer,[2] one of the most progressive of the medical inspectors in Philadelphia, says of her work:

The percentage of pediculosis existing in the schools where the nurse began her work in April, 1904, was 30 per cent. This has been reduced to 8 per cent. This is due to the influence of the nurse at the homes. Conjunctivitis and corneal ulcers received no attention from parents and were treated only after the children were taken in charge by the nurse. They were soon cured and the children able to resume studies. These cases included several in which corneal ulcer threatened the sight. Weak, anaemic children, unable to work or study, due to impoverishment from improper or no food, were visited in their homes and the existing difficulties corrected. Over 200 children with bad defective vision were treated and supplied with necessary glasses only through much persuasion and the persistent efforts of the nurse. This often required many home visits. The above reports show the remarkable results of medical inspection; but it requires the trained nurse to lend assur-

[1] E. M. Hickey, *Nurses' Journal of the Pacific Coast* (October, 1908); Elizabeth H. Ashe, *ibid.* (May, 1908).

[2] S. W. Newmayer, M.D., "Trained Nurses in the Public Schools as a Factor in the Education of the Children," *American Journal of Nursing* (December, 1906), 185; "System Employed by the Trained Nurse in the Schools of Philadelphia," *ibid.*, (January, 1907), 254.

physicians next year. We feel that even were there regular medical inspection, the visiting nurse is still a necessity to further the work of the physician.[1]

This whole work of visiting nursing, which has been so successful in Kalamazoo, was undertaken by the Woman's Civic Improvement League of that city. There is no organized National District Nursing Association in America to cover the small towns and the remoter districts. In England, Scotland, and Ireland, where there is such a large organization established by the late queen and generously endowed in her memory, both city and country are well supplied with "queen's nurses." These district nurses have done much to provide more or less regular care and attention to the needs of school children, as well as to the poor in their homes. In Canada, the Victorian Order, a similar organization, has also done something toward establishing school nursing in two or three of the larger cities.

When Miss Waters' book was published in 1909, the following cities in the United States had more or less complete systems of school nursing.[2]

MUNICIPALITIES EMPLOYING PUBLIC-SCHOOL NURSES

State	City	Under Department of	Established	No. of Nurses
California	Berkeley	Board of Education	1909	1
California	Los Angeles	Board of Health	1903	4
California	San Francisco	Department of Health	1908	4
Colorado	Pueblo	Department of Education	1909	1
Georgia	Atlanta	Department of Education	1909	1
Illinois	Chicago	Department of Health	1908	41
Iowa	Des Moines	Board of Education	1905	2
Maryland	Baltimore	Department of Health	1905	5
Massachusetts	Boston	Department of Education	1905	34
Massachusetts	Brookline	Department of Education	1909	1
Massachusetts	Cambridge	Department of Health	1907	1
Michigan	Detroit	Board of Health	1906	2
Michigan	Grand Rapids	Board of Education	1905	3
New Jersey	Jersey City	Board of Health	1907	2
New Jersey	Orange	Board of Education	1906	2
New York	New York	Department of Health	1902	141
New York	Syracuse	Board of Health	1908	2
Ohio	Cincinnati	Board of Health	1909	2
Ohio	Cleveland	Board of Education	1908	2
Oregon	Portland	City of Portland	1908	1
Pennsylvania	Harrisburg	Board of Education	1908	1
Pennsylvania	Philadelphia	Board of Education	1908	6
Washington	Seattle	Board of Education	1908	2
Washington	Tacoma	Board of Education	1908	1

[1] Caroline Bartlett Crane, *Charities and the Commons* (April 7, 1906).

[2] *Visiting Nursing in the United States*, 367.

THE FUNCTIONS OF THE SCHOOL NURSE AND VARIOUS ESTIMATES OF HER VALUE

The functions of the school nurse vary widely, each city or town working out its own system according to its needs and the special features of its organization. The question of expense is probably the largest determining factor. Some of these functions may be mentioned briefly.

a) Assistant to the school doctor in his visits of inspection—preparing children for examination, recording data, testing vision, hearing, etc.

b) Routine daily, weekly, or monthly inspection in classrooms.

c) Keeping of records, sending out reports to parents, cards to principals, etc.

d) Treatment of routine cases in the school—bathing eyes, irrigating ears, dressing wounds, etc.

e) Emergency service—caring for accidents, fainting, convulsions, etc.

f) Instruction of children in personal hygiene and sanitation—practical demonstrations and talks.

g) Follow-up work in the homes—notifying physicians, instruction of mothers in the care of children, taking children to dispensaries, dental clinics, etc., for treatment, when necessary.

h) Sanitary inspection of homes—discovering and reporting contagious diseases to Board of Health.

i) Reporting of truancy cases.

j) Teachers' and mothers' meetings.

k) Summer work in prevention of infant mortality—playground supervision, fresh-air excursions, etc.

In no one system are all these functions incorporated. Indeed, the staff of nurses is usually so entirely inadequate that only the most needy and pressing cases can be attended to. Some authorities consider one feature of the work of surpassing importance, others emphasize quite a different feature. But so far as the literature on the subject may be trusted, there seem to be no two opinions regarding the value of the nurse's work. Doctors, teachers, social workers, parents, and children are almost unanimous in their approval, and the best part of it is that the nurses themselves are enthusiastic over its possibilities.

It may be well to quote here the opinions of a few additional authori-

ties on the subject. The school physicians are the ones who ought to know best whether the nurse has made good in the field of health inspection. Dr. Newmayer, of Philadelphia, has written much on this phase of medical inspection.

The results obtained with little friction among doctor, nurse, the parent, and school teachers, are the best evidence of the success of our system. . . . .

The weak point in medical inspection lies in the fact that it brings to light conditions over which we can have very little control. We cannot alter the home environment or compel attention to any directions given. It is possible however to influence and instruct at the homes, and this can be best effected by the aid of a well-trained nurse. I look upon the services of a nurse as one of the most essential factors in any system of medical inspection. . . . .

There are various problems to be solved in each case and the nurse invariably finds the remedy. The duties of the school nurse assure success to the work of the medical inspector in improving the health of the school children.

Dr. Helen C. Putnam, whose work in medical sociology is so well known, in an address given at the Second International Congress of School Hygiene, London, remarks:

Medical inspection instructs indirectly but forcefully by drawing attention of pupils, parents, and the public to communicable diseases; to care of the person, general health and development; to school furnishings, lighting, ventilation, and playgrounds; but instructs most efficiently where school nurses are employed. It means much in two of our largest cities where from fifty to eighty thoroughly trained nurses not only attend to the minor ailments at the schools, but daily radiate therefrom into homes, showing mothers details of cleaning, feeding, clothing children and of caring for the premises. The immediate result observed is that the pupils sent from school by the physician return sooner and in better condition, and that many otherwise unknown wrongs to childhood are reported to proper authorities for correction.[2]

It is interesting to note the change in the textbooks on school hygiene within the last few years. In *Medical Inspection of School Children*,[3] published in 1904, there is a most thorough treatment of the subject of physical examinations, anthropometry tests, etc., and the authors show the new social standpoint in their recommendations for the investigation of housing conditions, the economic and wage-earning capacity of the parents, the healthiness or unhealthiness of local occupations,

[2] *Report of Second International Congress of School Hygiene*, 924.

[3] W. L. MacKenzie, M.D., and Edwin Matthew, *Medical Inspection of School Children*.

conditions determining food-supply, of the feeding of infants, of the nurture of mothers before and after child-birth, and of many other conditions, customs, etc., which so directly influence the health of school children and of the race. But while they recommend women sanitary inspectors for some of this work, only in one brief note describing the New York system do they mention nurses. They define the function of medical inspection, as the collecting of data as a basis for correct inductions, rather than the actual, immediate remedying of conditions.

More recent writers go farther, and in most of the works published within the last four years one chapter or more is devoted to the school nurse. A. H. Hogarth,[1] of London, writing in 1908, says:

The school nurse represents as new an idea in the school world as the school doctor. She is not a nurse in the usual acceptation of the term, but a woman who has had the scientific training of a nurse. On the other hand she is not merely a sanitary inspector or a health visitor. She is an education officer employed by an educational authority for certain routine medical duties in connection with education. As in the hospital, so in the school, she is the doctor's assistant and works under his direction.

In *Civics and Health*, published in 1908, Dr. Allen repeatedly emphasizes the value of the nurse, not only in the school but in almost all kinds of social-service work. Here he speaks particularly of an investigation by the Bureau of Municipal Research in New York to determine the reason for the ineffectiveness of medical inspection, under the older régime. Where home visiting was established—

the net average result of a day's work by a nurse was the actual treatment of over five children, three of them completely, and two of them for one or more defects, sixty cents per child!

Having established the willingness—even eagerness—of parents to do all in their power to remove defects that handicapped their children, it was obviously the duty of the health department so to organize its work that it could insure the education of parents.

So conclusive were the results of follow-up work efficiently supervised by the Department of Health, that school officials are, for the present, inclined to waive the demand for the transfer of physicians and nurses to the Board of Education, and to substitute education for compulsion with parents who obstinately refuse to take proper remedial measures for their children when reported defective.[2]

[1] A. H. Hogarth, M.B., *Medical Inspection of Schools*, chap. xii, p. 172.

[2] W. H. Allen, *Civics and Health*, 299–300.

Ralph H. Crowley, M.D., writing of the "Hygiene of School Life" in 1910, quotes the Board of Education of London as reporting that they

> are satisfied that this work offers a great field of valuable service for the school nurse, and they recommend that wherever practicable, education authorities should secure, especially in rural districts, the benefit and *true economy* which may thus be obtained.[1]

He further states that

> the two main requirements of medical inspection are: first, that children should receive treatment; and secondly, that the treatment should be adequate.
>
> The writer's own experience in the past has been that not more than about one-third of the parents notified have paid attention to such notices, and the reason undoubtedly in many cases is because the parents do not believe that the defects are such as are worth troubling about. The further opportunities now available for making inspection and reinspection more thorough, for interviewing parents or sending a nurse or health visitor around to the home, will undoubtedly lead to a much larger number of children receiving attention than heretofore.[2]

The superintendent of schools of Los Angeles, Cal., writes that one school nurse, through her untiring efforts, has created a sentiment of cleanliness not only among the scholars but among the families in certain sections of the city.

In *Medical Inspection of Schools*, published in 1908, the work is presented from the standpoint of both the physician and educationalist.

> To sum up the case for the school nurse—she is the teacher of the parents, the pupils, the teachers, and the family in applied practical hygiene. Her work prevents loss of time on the part of the pupils and vastly reduces the number of exclusions for contagious diseases. She cures minor ailments in the school and furnishes efficient aid in emergencies. She gives practical demonstrations in the home, of required treatments, often discovering there the source of the trouble, which, if undiscovered, would render useless the work of the medical inspector in the school. The school nurse is the most efficient possible link between the school and the home. Her work is immensely important in its direct results and very far-reaching in its indirect influences. Among foreign populations she is a very potent force for Americanization.[3]

[1] R. H. Crowley, *Hygiene of School Life*.

[2] *Ibid.*, 163–64.

[3] Gulick and Ayres, *Medical Inspection of Schools*, 80.

ATTITUDE OF TEACHERS TO SCHOOL NURSING

As might be expected the teachers were not all at first favorable to the new plan. Hogarth says:

The functions of a school nurse are likely to be extended in many directions, but if the teachers are not in harmony with the work, difficulties will inevitably arise. Experience in London, however, has shown that the majority of teachers, so far from objecting to the nurse, have constantly asked for more frequent visits and have, from the first, taken a pride and interest in the cleanly condition of the children attending their schools. Such co-operation is essential for a satisfactory and efficient school nursing service.[1]

The following is the testimony of a school nurse:

At first a number of school teachers, and even principals objected, but a very short time served to show that these could be classified into three groups. Those who did not understand just what school nursing meant and feared that it would result in interfering with the school routine or lower the attendance, when convinced that such was not the case became ardent advocates of it. Next came those who feared that part of the funds necessary to maintain the work were to be deducted from the already slender appropriation of the Board of Education.

The third group consisted of those who were old-fashioned and firmly believed that measles, scarlet fever, and diphtheria were dispensations of Providence, which everyone *had* to bear sooner or later, and the sooner we had them and got over it the better; also that pediculi, ringworm, impetigo, and scabies were afflictions of childhood, unpleasant to be sure, but not to be avoided. The members of this group withdrew into their shells, as it were, and dismissed the whole subject of medical inspection as one more "fad" which had to be thrust upon them. They neither assisted nor hindered, they simply ignored. They saw none of the good accomplished, but mentally filed for future reference any mistake or unpleasantness which occurred.

Lastly (and to their credit this group was extremely small) came a few narrow individuals who felt that the school and all it contained was their personal property, and that any person coming into it must necessarily be guided by what they thought. *They* preferred to say whether a child should be excluded or readmitted to school; what rooms routine inspection should be done in, and how frequently. In short, *they* wished to conduct the medical inspection of the pupils, not according

[1] Hogarth, *Medical Inspection in Schools*, 186.

to the ideas of the medical inspectors and school nurses, whose professional training qualified them for the work, but according to their own personal whims and fancies.[2] Most of the school nurses however speak with the greatest appreciation of the co-operation of teachers and principals in their work.

ATTITUDE OF CHILDREN AND PARENTS

The appreciation of the children is often amusing and always gratifying. They become very much attached to the school nurse and sometimes invent the most impossible ailments so they may consult with her. Every child loves to be mothered and a nurse should be essentially "a mother." They have the greatest faith in her powers. A little boy in Liverpool was found dragging his infant brother along to the school "to get the lady to cure his eyes." When the school nurse visits the homes, they all crowd around her, bringing their babies for her inspection, and insisting that she visits every sick man, woman, and child in the tenement or in the street.

The parents are not always so easily dealt with. One meets everywhere the unalterable conviction that dirt is healthy, vermin inevitable, and sickness just luck. The mother who knows all about ringworm because all her children had it and persists that "if they *are* to git it, they *will* git it," is not easily convinced of the possibility of its absolute prevention. She "don't 'old with fightin' Providence," but pins her faith to the good old treatment of "hink and tobacco hash." Some mothers object to all this fuss about cleanliness because they "don't want their children to get too high-toned." Another knows that if we were intended to wear glasses we'd be born with them, and presents the unanswerable argument that "if adenoids are not good for people, why were they put there?" They have an astonishing faith in the gospel of "things as they are." The foreigners are often suspicious and seem to be unable to grasp the idea of any person doing anything for them merely from a desire to help them. The men, who have some little acquaintance with the ways of the street, are willing to bet anything that the doctors and nurses are getting something out of this thing "on the side." But the mother who meets the nurse with a perfect torrent of abuse and declares with much emphasis that she never will allow anyone "to take

[2] C. R. Kefauver, "Obstacles in the Path of the School Nurse," *American Journal of Nursing* (August, 1909).

out Johnny's eyes and scrape 'em," is quite mollified when she knows the real reason and extent of the operation, and ends by inviting the nurse to "stay to tea."

The work requires endless tact, patience, and real sympathy with, and understanding of, the people. Miss A. W. Kerr, who directs the work in New York, says:

There are many pitfalls in the way. The nurse must not diagnose cases, she must not interfere with any physician's practice, she must not antagonize the family, and she must know their language, understand their customs, and respect their pride. She must see that defects are corrected, glasses supplied, that tea and coffee are cut out of a child's diet and milk and eggs substituted.

She is always running up against difficult situations, national prejudices, and national customs. To deal with these wisely requires no small knowledge of psychology and sociology, as well as a practical insight into actual conditions.

It is all very well to say in general, give meat or milk or eggs, but when these articles are seldom or never used, it is better to say to an Italian mother, "Give to Theresa less spaghetti and more oil," or to a Russian one, "Do not let Katia have so much kale, but give her plenty of noodles." That is practical advice and is likely to be followed.

In persuading the parent to attend to such defects as adenoids, bad vision, etc., the wise visitor studies the dominant national traits of each group and appeals to these. In an American community it is national pride—the desire to have the American child equal, if not superior, to every other. In a Swedish community it would be shown that removal of physical defects renders a child brighter and more successful in life. In a Jewish district, the ultimate saving in increased earning capacity that results from better health, and the great financial waste of sickness is the dominant argument. Above all, the public needs to be constantly educated in one thing—that is, that it as tax-payer is maintaining the boards of education and of health, and that it has the greatest reason for demanding the highest interest on capital invested.

But the results are on the whole encouraging, and the nurses see the fruits of their labors, and receive much real gratitude. The following is one of the hundreds of such testimonies:

DER NURS: I lov yu becos yu mak wel mi mary. It is gud dat de schul has such a gud womin to luk after de childen. mi usband tanks yu to. God bles yu.

SCHOOL NURSING IN RELATION TO THE MEDICAL PROFESSION

The family physician has resented the offices of the school nurses in some cases on the ground that they defraud him of his rightful practice. This is not perhaps without some reason. It is very hard for her to know always when a family is able to pay for treatment and when the child ought to be taken to the dispensary. Then professional grafters *have* been known to invade even a system of medical inspection, using their office to secure patronage either for themselves or their friends. Here between her rigid code of professional ethics and her desire to do the best for the child and the family, the nurse is surely in a difficult position.

It is an old tradition, fostered by the military system under which trained nursing came into being, that the nurse's first and only duty is to obey orders. The doctor is the captain and she is the private, and she is there not to question nor even to understand his mandates, but simply to do what she is told. There are still many physicians who hold that obedience is the only requisite in a nurse, and who jealously oppose any system of training or any plan for raising educational standards which might give her a broader understanding of her problem, and thus increase the scope of her labors. Such men are filled with apprehension at the powers which are being placed in the hands of the school nurse, particularly in the detection of pathological symptoms and abnormalties, which they consider to be really the assumption of her ability to diagnose disease.

It may as well be emphatically stated that it is no part of the school nurse's plan to supplant the doctor either in the school or the home. She is there to supplement him, to carry out his instructions, and to see that they are made effective. But she does more than this, as has been shown; her function in the school is largely a social and educational one. She does not covet the field of medical practice; her own field is an ample one, rich in opportunities, wonderful in its possibilities, and fruitful in its results. It offers scope for all her highest faculties, and presents large problems for investigation, for development, and adjustment.

Some of the difficulties encountered are doubtless due to the nurse herself. She has not always been the best person for her place, and neither her school nor her hospital training has fitted her fully for her work in this new social field. She herself is in process of evolution, and only as she

adapts herself to the special needs of the situation has she any hope of ultimate survival. I have attempted to show by the history of medical inspection that the visiting nurse *has* done this in a rather effective way in school nursing, and that she is the logical person for any such work. But this is not to say that all nurses are fitted to be school nurses, any more than all teachers are fitted to be kindergartners.

Many nurses are essentially doers and not teachers, many do not care particularly for children, others grumble at the routine of school work, and prefer the more varied and strenuous experiences of hospital or district work or the more lucrative service of private nursing. A more careful selection of school nurses on the ground of personal qualifications and professional training would obviate many difficulties.

OTHER TYPES OF SCHOOL WORK IN WHICH NURSES ARE ENGAGED

It is not only in the ordinary school, however, that the visiting nurse comes into contact with the children and demonstrates her value as a teacher and promoter of health. In open-air schools for anaemic, tubercular, or convalescent children, she is employed in more strictly nursing duties, seeing that the little patients are warmly clad, watching for signs of fatigue, attending to matters of diet, etc. In schools for defectives and cripples, in institutions for the blind, in reformatories and all such institutions where the physical condition is so often the key to mental and moral improvement, nurses are employed in increasing numbers. In the home and school visiting work undertaken by the Public Education Association of New York, it happened last year that three out of five of the visitors appointed had been district nurses. Their duties did not primarily relate to health at all, but it is found that the wide practical training of the visiting nurse gives her social insight and an easy entrance into the homes. It might be added that two at least of these nurses had been formerly teachers, not at all an unusual combination among nurses. This makes them as much at home in the schoolroom as the hospital ward or the sick room, and makes an excellent basis for the specialized training in psychology and sociology which is needed for work with defective and delinquent children. Dr. Witmer speaks of the great value of such a teacher-nurse employed in his hospital school for defective children in Philadelphia.[1]

[1] Lightner Witmer, Ph.D., "The Hospital School," *Psychological Clinic* (October 15, 1907).

Some of the large residential schools and colleges now engage a trained nurse to attend the cases of illness, but it is significant that emphasis is being laid more and more on the preventive rather than the ameliorative aspect of her work, so that she is really a supervisor of health in the dormitories. Statistics show a marked decrease in small ailments and in contagious diseases, and an improvement in the general health of the school body, where this work has been carried on intelligently and faithfully.

TUBERCULOSIS WORK

Some mention should be made of other activities where nurses are engaged, which touch the educational problem rather intimately. The societies for the prevention of tuberculosis are convinced that if they can only teach the school children the practical, vital principles of sanitation and the simple facts about tuberculosis, it will be a most important contribution to the suppression of a world plague. Very little can be done with the mothers and fathers whose habits are more or less fixed and who on account of fatigue or despair or simple indifference have lost the power of readily assimilating new ideas. But the children are alert and impressionable, and their co-operation is easily secured. In some cities from 30 per cent to 50 per cent of the school children are already infected with tuberculosis and in all schools many will inevitably contract the disease. Dr. Farrand says at the lowest estimate there are now in the schools of the United States 150,000 children who have well-marked symptoms of tuberculosis. The application of a few simple hygienic and sanitary rules would save a great number of those children. If they can only be made to feel the importance of the problem, there is hope that the homes of the future at least will be made comparatively safe.

In Pittsburgh and Cincinnati where the anti-tuberculosis propaganda is particularly active, a nurse is employed for the public-school work. With the permission of the school board and the co-operation of principals and teachers, she arranges for talks in every schoolroom or, in some cases, for larger groups in the assembly halls where she has a lantern and stereopticon views. These talks are very short and simple, suited to the age and character of her listeners. The aim is to give an elementary working knowledge of tuberculosis and how to combat it. Illustrations are used, exhibits are set up in the schools,

and attractive illustrated circulars are distributed afterward, with instruction that the children are to take them home and explain them to their parents and friends. Sometimes they write essays on the subject, and their work shows a remarkably clear understanding of the main points involved.[1] Dr. John M. Withrow, superintendent of the Cincinnati League, writes:

I cannot speak too heartily in favor of education in the schools as a means of promoting our work. We have found it here to be one of the especially effective and popular features of our work. I am inclined to think that it is the best means of reaching into the home.

Dr. White of Pittsburgh, speaking at the Sixth International Congress on Tuberculosis in Washington, 1908, says:[2]

I wish to call especially to your attention the educational work in the schools. No one can do municipal work without being convinced that it cannot be done without a trained nurse, but her duty is that of an educator, and there is no one who can enter the home as readily as the nurse can do, and as a woman can do. We must take the impressionable age, and that is childhood. You must accomplish results by repetition; results will come in time. Remember that unless we have systematic efforts in education they will not be of much value. We must continue year after year to do this work if we are to obtain results.

In both these cities the nurse gives talks to mothers, to working girls' clubs, Young Women's Christian Associations, and other groups of women. In Cincinnati the school instructress, as she is called, addresses also the pupils in the parochial schools, and the priests have invited her to talk to the Sunday-school children on Sunday afternoons. But the talks in themselves are useless unless the subject is made concrete and practical. Almost none of them, children or parents, grasp the significance of what they see and hear, except as it is interpreted to them and related to their lives. If such work as this could be made a feature of public-school instruction throughout the country, we might reasonably expect a marked fall in the death rate, not only from tuberculosis but from other preventable diseases. Results are seen already in increased attendance at clinics, more intelligent treatment of the sick, and more sanitary conditions in the schools and homes. This is

[1] Bertha L. Stark, "Anti-Tuberculosis Work in the Pittsburgh Public Schools," *Report of the Sixth International Congress on Tuberculosis*, III.

[2] *Ibid.*, 583.

only one phase of the general campaign of education in the homes, dispensaries, hospitals, sanitariums, and everywhere. The moving-picture show is the latest addition to the teaching forces, and will doubtless help much in interesting the children. This school work has been taken up in Columbus, Cleveland, Philadelphia, Hamilton, Ontario, Hartford, Connecticut, Salem, Massachusetts, and Washington, D.C., on the same plan, and many other cities have written asking for information and copies of the literature distributed. Inquiries have been received from Russia and other foreign countries.[1]

I quote Dr. Darlington again in regard to the need for this teaching and the peculiar function of the visiting nurse:

> In all large communities, the poorer element of the foreign-born population presents the greatest problem encountered in municipal health work. Diversified in their habits, often superstitious and resentful of any interference with their mode of life, oppressed by poverty, frequently ignorant or neglectful of the simplest sanitary requirements, their assimilation as citizens of their adopted country comes only as a result of education—persistent, inclusive, and never-ending.
>
> In public-health work this education is brought about by various means. Lectures, printed instructions and publicity in all its forms are used, but the most valuable and effective form is found *in individual instruction in the home.* Personal efforts, advice, instruction, and demonstration offer the most practical and effective means, and we have found the employment of trained nurses for this purpose of inestimable value.

Dr. Livingston Farrand, secretary of the National Society for the Prevention of Tuberculosis, in a recent lecture at Teachers College, said that after all the forces of prevention and cure have been set in operation—exhibits, lectures, sanitaria, preventoria, dispensaries, etc.—he believed that the most important work of all would still be the actual teaching and treatment of the cases in the homes by visiting nurses.

Dr. Osler never loses an opportunity of magnifying the nurse's office:

> The district nurse is a ministering angel everywhere. If I were not a man, I would rather than anything else be a district nurse. The work they do in connection with tuberculosis is of the greatest value—visiting the patients, watching over them, advising them, teaching them how to lead rational lives.

[1] *The Tuberculosis League of Pittsburgh* (published monthly).

Dr. Edward Trudeau, of Saranac, the great apostle of the movement in America, says:

In regard to my opinion of the value of the district or dispensary nurse in the combat with tuberculosis, I have always felt that the nurse's visit to the house and her personal contact with the people were *essential* to any degree of success in diminishing infection in the home. . . . . People who won't go to lectures, won't read and won't do anything they hear from their associates they ought to do, will gather around a nurse in their own homes and appreciate at once how simple are the measures necessary for their protection. I think the nurse a most indispensable weapon in the great warfare and that she perhaps accomplishes more in practical prevention than any other agency.

INFANT MORTALITY

It is the same story with infant mortality. Both of these great destroyers of life, tuberculosis and the diseases of infancy, affect the school in a very vital way. Sir James Crichton-Browne makes the statement that:

Of all infants born in our large towns, some 20 or 30 per cent are visibly damaged at the time of birth, and of the 70 per cent or 80 per cent that pass muster then, some probably bear in their nervous systems hidden marks of maternal privation that will come to the surface by and by.[1]

It seems more and more evident that if the race is to be radically improved, it is necessary to begin before school age, indeed before birth in the education and care of the mother, and later in the protection of the child. Physicians, philanthropists and educationalists, domestic-science experts and vital statisticians are all working toward the solution of this big problem. Dr. J. H. M. Knox, assistant in pediatrics at the Johns Hopkins Hospital, voices the opinion of many experts when he says:

There is no person in the community who can be of equal assistance in the prevention and cure of diseases among infants, to the trained nurse. . . . . From considerable experience in milk-station work, I am glad to acknowledge that fully one-half of the benefits from the distribution of pure milk to babies, comes directly or indirectly through the instruction and friendly visiting of nurses.[2]

In the recent Conference of the American Association for the Study and Prevention of Infant Mortality, practically every paper emphasizes

[1] *Report of International Congress of School Hygiene*, 96.

[2] *Visiting Nurses' Quarterly* (Cleveland, July, 1910).

the absolute necessity of the nurse's teaching in any adequate campaign against infant mortality.

In summer, the school nurses employed by the Board of Health in New York are distributed through the various districts of the city, co-operating with the nurses of several other organizations in teaching the mothers and caring for the health of babies. They visit each child whose birth has been reported by a midwife, inquire into conditions, especially in reference to eye-infections, and instruct the mother in the care of the baby, including hygiene, feeding, clothing, bathing, and the value of fresh air. Repeated visits are made to see that these instructions are followed. When it is considered that over 45 per cent of the births in New York City are attended by midwives, usually of the most ignorant type, the magnitude of the work will be realized. Dr. Darlington reports:

The midwives soon learned that the nurses were visiting their cases, and manifested great interest. They informed the mother that the nurse would call, and that her instructions must be carefully obeyed; they sought instruction for themselves and followed the methods advised, and the reports of improved asepsis and better care on their part can be counted as not the least of the results of the nurse's work.

This year the nurses have made a total of 106,772 visits, 770 sick babies have been treated by the Department of Medical Inspection, with a total of 1,850 visits. 4,888 cases have been referred to other agencies of the Conference for aid or treatment.

I quote from a personal letter from Dr. Josephine Baker, who is the head of the Department of Child Hygiene under the Board of Health, and who has direct control of all this work.

Nurses are assigned to various recreation centers, milk depots, and diet kitchens throughout the city, and at these centers, in connection with the doctor who is also assigned to this duty, they hold clinics for the instruction of mothers. This work is carried on wholly with the idea of prevention of the diseases of infancy, particularly the gastro-intestinal diseases. If sick children are found they are cared for by the nurse acting under instructions of a department physician. I am glad of the opportunity to heartily commend the work of the nurses in this department. I consider it a most valuable feature of the work the department has done in preventive medicine, and that it opens a large field for the trained nurse. During the past summer, including the months of June, July, August, and September, 3,383 children under two years of age died from diarrhoeal diseases. During the summer

of 1908, the same months, 4,180 children died. This reduction is undoubtedly due in a large part to the campaign of education which has been carried on so persistently during the past year.

In Philadelphia results showed 36 per cent less infant mortality in the districts covered by the municipal nurses than in the rest of the city as compared with the preceding year, notwithstanding that the summer was the most trying one in thirteen years.[1]

The plan for "little mothers'" classes in the schools of New York was an extension of the work for the prevention of infant mortality. The classes are started in early summer and are continued through the holidays. The older girls, and sometimes the boys, who are in charge of babies at home, join the "little mothers'" clubs, and there is considerable competition among them, for as yet there is a restricted membership. A girl who is not so fortunate as to possess a baby adopts her neighbor's so she may qualify for membership. Talks are given by the doctor or nurse and a real live baby is secured if possible for the demonstrations. The children show the greatest enthusiam over the bathing and feeding and caring for the baby, and carry out their instructions very faithfully, often in the face of much good-natured protestations from their mothers and the neighbors. But the foreign peoples have great respect for the wisdom of the public school, and where the "little mothers" are taking command, pickles and sauerkraut are disappearing very gradually from the baby's rations and, at the first sign of illness, it is hurried to the nearest milk station or dispensary for expert advice.

It is significant that a corps of school nurses should have been so largely identified with this great work of child-saving. It points to an extension of their functions which will enable the school to "begin early" in preparing its pupils for education. There is some indication that the cities are waking up to the economic significance of this movement.

In New York City we have asked for and hope to receive an appropriation sufficient to employ a staff of nurses large enough to continue this work throughout the year. It is an economic truism that the saving of life and the preservation of health offers greater value to the state than can be gained in any other way. Governments must conserve the health of the babies and the

[1] Paper by Dr. Joseph S. Neff at the Conference of Infant Mortality in Baltimore, 1910.

children if they are looking to the future and virility of their citizens, and money, time, and effort can be expended in no more worthy purpose.[1]

In Boston, where medical inspection is under the Board of Education, the nurses are detailed for playground work during the summer. 'Sometimes they take parties of children to the country or seashore, and in other ways look after their physical welfare. In every city they co-operate with the visiting nurses' societies, milk stations, summer camps, and other social organizations.

THE ECONOMIC VALUE OF THE VISITING NURSE

The wide possibilities of the work in the family and the co-operation with other social forces is indicated in an extract from a paper on "The Visiting Nurse":

I ought to speak too of the great indirect benefit to the community of a visiting nurse who is alert to render all possible services. As she comes to know a family well, she can often put her finger on just the economic or sanitary shortcoming of that family which keeps them poor or makes them sick. She is able to point out the folly of the cut-throat chattel mortgage; the grocery credit-book; the unnecessary furniture purchased so dearly on the alluring instalment plan; the ruinous economy of living in dark rooms or amid insanitary surroundings because "the rent is so cheap"; the suicidal policy of taking the children prematurely out of school to put them to work.

She reports to the charities organization headquarters cases of destitution or of lack of employment, ... violations of sanitary regulations, and violations of the child-labor law.[2]

Again Miss Wald says:

But the nurse has been more generally accepted as the conveyor of education to the individual, the interpreter of the movement to the people, the guardian of the parents and, indirectly through her supervision of them, the policeman for the community. The educational value of the technically trained and socially aroused nurse is of great importance, but her best social value lies not primarily in her office as a carrier of education, but in the clearness and force with which she makes known and understood the patients' accompanying disease of poverty. Teaching individual hygiene, impressing upon the poor consumptive the last word of science upon the healing value of sunshine, importance of limited hours of labor, good food, etc., would many times appear to be cruelly sardonic were it not for the confidence that she

[1] Dr. Darlington, Address to the Woman's Municipal League, January, 1910.

[2] Caroline B. Crane, *Charities and the Commons* (April 7, 1906).

(the nurse) is playing her part to urge on the regeneration of living, housing, child-protective and wage conditions. No one sees as well as she—not even the physician—all the misery, the heroic struggles, the ignorance and superstition in the double struggle against poverty and illness. Her force must be tested by her clearness in making these conditions known, as well as by her intelligence in caring for her patients and by her value as a teacher.[1]

A very interesting demonstration of the economic value of the visiting nurse's services has been given during the past two years in New York. The Metropolitan Life Insurance Company has been instituting a plan of working men's insurance under Mr. Lee Frankel, who was formerly head of the Hebrew Charities. Miss Wald, of the Henry Street Nurses' Settlement, quickly saw the possibilities in the weekly visiting of the insurance companies' collectors, and asked for the co-operation of the company in reporting cases of illness found in these homes. This led to an arrangement between the company and the settlement, by which the company paid at the rate of so much per visit for all attendance on its policy holders. A very complete system was arranged and the results carefully tabulated for one year. They were convinced that nursing care and the constant instruction of the visiting nurses would effect a decrease in the morbidity rate and enable policyholders to get to work sooner and keep in better condition. It proved to be *an economic gain* to the insurance company and the system has already been established in a great many other cities. Other progressive organizations, department stores, factories, etc., engage nurses not so much to care for sick employees as to look after their comfort and well-being, to tell them how to care for themselves and to *keep them well*. This is not a philanthropy—it is a business proposition.

IS THIS NURSING WORK? FLORENCE NIGHTINGALE'S CONCEPTION OF NURSING

It has been noted that in all this preventive and remedial work the services of the nurse as *teacher* and *social worker* are held to be of supreme importance. She has been so closely associated in the public mind with the actual bedside treatment of the sick, that this new work is viewed as something of an anomaly. But Florence Nightingale saw it clearly from the first. As the founder of trained nursing and herself the great-

[1] Lillian D. Wald, "Educational Value and Social Significance of the Trained Nurse in the Tuberculosis Campaign," *Report of Congress on Tuberculosis*, III, 632–38.

est nurse—as she was one of the most far-sighted of philanthropists, sanitarians, and social economists of any age—it might be well to consider her conception of "Nursing."

The very elements of what constitutes good nursing are as little understood for the well as for the sick. The same laws of health or of nursing, for they are in reality the same, obtain among the well as among the sick. The breaking of them produces only less violent consequences among the former than among the latter, and this sometimes, not always.[1]

"Health-nursing" she calls it in distinction to "sick-nursing." She was one of the first to preach the gospel of fresh air. How she pleads for the lives of the babies in the close, fetid tenements where two in every five die before they are five years old!

The life-duration of tender babies (as some Saturn turned analytical chemist says) is the most delicate test of sanitary conditions. And Oh, the crowded national school where so many children's epidemics have their origin, what a tale an air-test would tell! We should have parents saying rightly "I will not send my children to that school, the air-test stands at 'Horrid'"!

Again she says:

We have tons of printed knowledge on the subject of hygiene and sanitation. The causes of the enormous child-mortality are perfectly well known, but how much of the knowledge has been brought into the homes and households and habits of the people—poor or even rich?

She speaks in fine scorn of the method of "sprinkling lectures over a community in the hope of teaching public health."

The chief epidemic that reigns this year is "folly." You must form public opinion. But while public opinion or the voice of the people is somewhat awake to the building and drainage question, it is not at all awake to teaching mothers and girls practical hygiene. . . . . Is it better to learn the pianoforte than to learn the laws which subserve the preservation of offspring? . . . . Where then is the remedy for this ignorance?

Everywhere it is the same solution. Education—the people must be taught, not in the lecture-hall but in the home. There must be a corps of nurses in every city and country district—"missioners of health," she calls them. In answer to the contention that the visiting method is slow, she says:

What is slow in more senses than one is the eternal lecturing, words that go in one ear and out the other, *the only word that sticks is the word that follows*

[1] Florence Nightingale, *Nursing, What It Is and What It Is Not.*

work. The work that pays is the work of the skilful hand, directed by the cool head, and improved by the loving heart. . . . . The point is, not 'are the people interested in the lectures," but did they practice the lecture n their homes afterwards? . . . . We have medical officers, immense sanitary works; we have not nurses—missioners of health-at-home.[1]

Most of this was written between 1860 and 1870 and the same points were repeated again and again in her voluminous writings. She was one of the first to advocate prevention, and it was due to her that many wide-reaching sanitary reforms were established in military camps, in cities, in rural districts, not only in England but in India and everywhere. And it was women, trained women always, that she appealed to, to take up this tremendous teaching-task, nurses or sanitary inspectors of the highest character, of education and culture to meet a need "as old as the world, as large as the world and as pressing as life and death."

THE FUTURE DEVELOPMENTS IN SCHOOL-NURSING

But to return to the school nurse. The tendency at present seems to be toward a multiplication rather than a reduction of her functions. Some advise a rigid restriction of her duties to routine inspection of the most superficial sort, which means that she is to detect vermin and dirt and other extremely obvious and unpleasant things, but must carefully avoid any meddling with physical defects, and must on no account presume to exclude on her own authority a case of infectious disease. On the other hand, the hard-pressed medical inspectors are themselves asking that she should not only examine the eyes, throats, etc., of the children daily or at least weekly, but that she should assist also in making measurements, testing vision and hearing, and should in every way help the physician to do his work economically and efficiently. Dr. Cabot, of Boston, has pointed out that the training in observation which the nurse has, and her experience in the schools, enable her to discover even more quickly than the young doctor the first symptoms of the infectious disease. He states:

For ten years in Boston schools the average number of cases of scarlet fever found each year under inspection of teachers and doctors was 14. In 1908 under inspection of school nurses, 1,000 cases were found. That means that the nurses were nearly seventy times as good as the teachers in making

[1] Nutting and Dock, *History of Nursing*, II, chap. v.

the diagnosis of scarlet fever under so-called medical inspection (really teachers' inspection). The average number found each year was 86 cases of measles. The school nurses in 1908 found 2,285 cases, or about thirty times as many.[1]

It is obvious that, for many years to come, the number of children under the care of one school doctor will be much too large for any careful and systematic inspection. With the co-operation of an adequate nursing staff, the work could be divided so that the physician's time could be saved for actual examination and diagnosis. I need not say that the salaries offered in most of our American systems, do not induce the best type of medical man to go in for medical inspection, or to stay at it till they become proficient. A few trained experts with a good staff of nurses will do much better work than a large staff of young, untrained physicians.

Hogarth points to the extension of the school nurse's duties in several different ways—the possibility of gradually replacing school-attendance officers by school nurses, the need of special work in connection with infants and nursery schools, the systematic treatment of chronic diseases in regularly organized and equipped school clinics, and the increasing development of fresh-air and special schools for defective and debilitated children, where a resident nurse would always be needed.

In any case the school nurse is definitely an education officer and not merely a district nurse or health visitor employed by the schools. Her first instinct and duty must be to promote the efficiency of school routine by increasing attendance and improving the health of the children. At the same time her work should be directed toward the education of the children in the principles of cleanliness and of healthy living. She should be interested in the simpler problems of school hygiene and should call the attention of the teachers and children to the necessity of open windows, to the harmfulness of wet clothes and boots and to other similar matters. Incidentally she should take notice of all sickly and ailing children and should endeavor, when necessary, to get medical assistance. Sometimes she may be able to obtain the help of voluntary societies for the purpose of sending a child to the hospital or into the country. By these and similar methods she may hope to train the parents, through their children, to aim at a higher standard of health and comfort in the homes.[2]

[1] *Ninth Yearbook*, Part I, "Health and Education."

[2] *Medical Inspection in Schools*, chap. xii, 180–81.

Of course in the question of clinics, there would have to be specialization, for no one nurse could possibly cover all phases of the work even in one large school. Miss Margaret MacMillan, of Bradford, England, who has written and done so much for school children, has recently instituted a school clinic in Bradford, where one nurse treats as many as sixty cases in an afternoon.

There is another field of school hygiene which will inevitably fall to the nurse's province, a type of work in which her hospital experience ought to make her pre-eminently successful. That is the routine sanitary inspection of school buildings. In a report made before an incorporated society of medical officers of health, in November, 1902, Dr. Bruce offers this as one of many recommendations for a system of administrative hygiene in Scottish schools:

> As regards ordinary sanitary arrangements, such as cleanliness of the school-rooms, the clothes of the scholars, proper airing and heating of the classrooms, sweetness of the latrines, and general tidiness of the school and its appurtenances, we believe that such matters would be best dealt with by a staff of female inspectors.[1]

Of course in Britain there are specially trained women for just such work. Mr. Lawrence Veiller, who has done such remarkable service as head of the Tenement House Commission in New York City, pays the highest tribute to the worth of women sanitary inspectors as compared with the average man inspector in his department, and particularly to those who had the training as nurses. If hospital ideals of cleanliness and disinfection could be applied to public-school buildings, there would be a marked improvement in the health of the children and teachers from this cause alone.

The question of authority might be a difficult one here—whether such an inspector would have power to enforce her demands, and who should back her up, the board of education, the board of health, the school physician, or the school principal. Under one expert health authority in a large system, there would be little difficulty, but in a small system her duties and powers would have to be plainly defined.

The value of home visiting has already been sufficiently emphasized. It would seem that this work ought to be extended to include a more or less regular visiting of the homes of all the children. In many instances

[1] MacKenzie and Matthews, *Medical Inspection of School Children*, 123.

it is only the children who are fortunate enough to be "cases" who receive any special attention at all. Probably the greatest number of the homes present the same needs as do these that are visited, but conditions never come to light, and parents and child and school and community are all the losers. The nurse could be that much-needed link between the home and the school, interpreting the ideals and purposes of the school to the home, and discovering the limitations and adverse conditions which surround the children there—conditions which so vitally affect the best efforts of the school. As a nurse she finds out quite incidentally many facts that a social investigator would find it hard to secure. The experience of school nurses and of district nurses is that the mothers welcome the opportunity of talking over many troublesome problems that would never be discussed with the ordinary visitor. This is simply because of the nurse's training and experience, and it is as noticeable in the homes of the well-to-do as among the poorer people.

There is moreover a well-organized popular sentiment in favor of the visiting nurse which gives her special advantage as a social visitor. Even without the bonnet and cloak which has become so familiar and safe a badge in the lowest slums of the older cities, the "lady with the bag" is not only tolerated but welcome in the homes of the most ignorant and degraded. The visiting nurse has won her way, not without difficulty even here in America; but wherever her work is known, her position is assured. Even the new-come foreigners, at first so suspicious, early learn to know and trust her. Hers is a service that they can understand; she makes them comfortable; she eases their pain; she sees that their urgent needs are supplied. The school nurse builds on the work which these early nursing pioneers have done, and inherits the good graces and the confidence of the people. It would take a long time for any new type of social visitor to win such a place.

In regard to the teaching of hygiene, there will always be a difference of opinion as to how the subject is to be taught, and who is to do the teaching. It matters very little which type of specialist is engaged to do the work, for after all success depends on the individuality of the teacher and on his or her enthusiasm, rather than on special academic preparation. Responsibility will be divided according to the number of special teachers and officials available and their relative qualifications, and according to local needs; sometimes it will be the regular grade

teacher, sometimes a biology or physical-education or domestic-science teacher, sometimes a doctor or nurse.

I have attempted to show that the strength of the nurse's teaching lies in the practical application of simple principles to everyday concrete situations. This is not such a new type of teaching as it was in the time of which Florence Nightingale wrote, or the earlier days of school nursing. Honnor Morten speaks of the teaching in the London schools:

> The poor children are being "told" things all day long. The nurse showed them, and because she was not regarded as a teacher, was the best instructor in the most important and most neglected branch of education.

The matter of sex-hygiene is difficult because there are so many factors to be considered in any proposal for the teaching of the subject in the schools. It is apparent however that the nurse more than any other social worker, except perhaps the doctor, sees the dreadful havoc that ignorance makes in human lives. That whole dark seamy side of life which is laid bare in the hospital wards cannot fail to impress any thoughtful person with the necessity of full and adequate knowledge for the self-protection of all young people, and especially of girls. Whether such knowledge can be given in the form of class instruction or not, it would seem that a wise and tactful nurse who is associating freely with the children could give much personal advice and assistance to the older girls in the school, at the same time supervising their health and watching over their development.

Experiences in girls' clubs in the settlements has shown that they do appreciate such instruction and often ask for it. They consult a nurse more readily because they know that this is such an everyday subject with her. Any teacher who can discuss such questions naturally and without self-consciousness helps the girls to take a sane and healthier view of the subject, and if the doctor or the nurse can do this without introducing the pathological element unduly, much good should result.

But whatever may be the difficulties here, there can be no doubt that every pupil ought to have some instruction on the subject of home nursing and first aid in emergencies. Some little work of this kind is being done in connection with some courses in domestic science, but, especially in the eighth grade and in the high school, it deserves

a much larger place in the girl's training. The subject should be taught by a well-qualified trained nurse, and should consist largely of demonstrations and practical work. It is an excellent medium for driving in the vital facts of hygiene and sanitation and developing the finer instincts of growing girls. The care and feeding of children comes in incidentally with such a course, and the "little mothers'" classes show with what a splendid enthusiasm and practical skill the girls apply the principles taught. The same kind of work is being done with excellent results in "grown-up" mothers' clubs and evening classes for young women.

With such an accumulation of needed duties, it would require the service of one nurse for each of our large schools, and this will probably be the ultimate solution of some of these vexed problems. Miss Margaret MacMillan, in a recent address under the auspices of the Public Education Association of New York, gave as her opinion that, as soon as the urgent need for treatment and nursing care diminishes as it must do in the schools, the nurse will be employed more and more in these other fields, but so far the number of nurses is so inadequate that their services should be available for those duties which seem most pressing.

ORGANIZATION AND ADMINISTRATION OF SCHOOL NURSING

We come now to the question of organization and administration. As has been noted, the work exists under a variety of managements—private charity, visiting nurses' societies, boards of health, and boards of education. There seem to be special advantages and disadvantages about each form of organization. Where the work is under the visiting nurses' societies, the school nurses are appointed from the regular staff, and have usually the advantage of a wide social experience. They know the city and the homes, are acquainted with all the charitable organizations, the courts, and the boards of health, etc. In this way a much closer co-operation with other social forces is possible. The board of education has no responsibility for details of organization and simply pays the salaries of the nurses. In Cleveland where the work is under the Visiting Nurses' Society, the nurses are employed as teachers and have been placed on the teachers' schedule, the amount received being based on experience and efficiency. Such a plan has worked very well in that city and in many others and is to be recommended for all smaller cities where there is an efficient district-nursing organization.

One great advantage of this arrangement is that the appointment of the school nurse is made by a nursing body which not only investigates her credentials but tries out the applicant in the field of district nursing. Many of those who apply depend on political pull to get in. They may have no aptitude for the work, not even a proper hospital training, and frankly desire to get into school work because of the short hours and easier duties. Rural-school nursing could be started in the same way as in Great Britain, but unfortunately rural district nursing is not at all well developed in America.

As to whether the board of health or the board of education should be in control of the situation in the larger cities, there seems to be no uniformity of opinion. As far as the nursing in its present scope is concerned, there is probably little difference. Should the nurse's duties be extended, however, and especially should she be engaged for any teaching duties, it would seem more fitting that she should be in closer touch with the educational organization.

Dr. Osler says:

> The ideal conditions are easily defined. First, a central department at the Board of Education which would supervise and co-ordinate work throughout the country; secondly, at each school an intelligent woman, preferably one who has had experience as a nurse, whose duty it would be to carry out anthropometric observations at stated intervals, to assist the doctor in all matters relating to the hygiene of the school and the personal hygiene of the children; thirdly, a school dentist who would make an inspection of the mouths of the children and put their teeth in order; and lastly, the school doctor.[1]

When a regular instructor in physical education is employed, measurement, weights, etc., are usually under that department. It is important that there should be the greatest harmony and co-operation between these different specialists; this can be more readily effected where all health functions are under one expert head.

In his recommendation of machinery for health supervision and instruction in the schools of the city, Dr. Allen advises, among other features, "a staff of nurses to assist medical examiners to give practical demonstrations in cleanliness, to teach mothers the care of children, both at their homes and in mothers' meetings, to enlist the co-operation

[1] "Medical and Hygienic Inspection of Schools," *Report of Second International Congress of School Hygiene*, 468.

of family physicians and neighborhood facilities such as hospitals, dispensaries and relief agents, magistrates, courts, and probation officers, all to be under the board of education or the board of health."[1] For the county he would have "a physician and nurse to organize inspection and instruction for rural schools, to give lessons and make demonstrations at county institutes, to show teachers how to interest physicians, dentists, health officers, and parents in the physical welfare of school children." The hygiene of school buildings would also be under their inspection.

In regard to the relative number of doctors and nurses required, there is the greatest difference of opinion. Much depends on the amount of time which the school doctor devotes to his work. Often there are nurses but no regular physicians employed, and here of course the more pronounced cases are referred to home physicians or dispensaries for diagnosis and treatment. Sometimes the school is inspected daily, sometimes weekly or even monthly. The nurse may have 1,000 children under her care or she may have 10,000. Dr. Newmayer says one nurse is capable of attending to five schools with 5,000 children, visiting three in the morning and two in the afternoon, and doing the home visiting after school. Usually when she visits the school every day, she has time to treat only the chronic cases and those which the teacher and doctor send to her, leaving the routine inspection in the classroom to be done as she can find time. In London one nurse might have from 24 to 48 schools to inspect.

Only in the event of gross neglect or ignorance on the part of the parents are the nurses required to follow the children to their homes and to advise the parents. Their original powers for the exclusion of verminous children were severely restricted. If after repeated visits the children are still unfit to associate with others, the case is taken up with the divisional superintendent who summons the parents to the police court to explain why the children are not in school. The magistrate usually imposes a fine which is heavier for a second offense.[2]

Of the routine inspection Dr. Hayward says:

Often as many as 200 or 250 children pass before the nurse at one time. She detains them merely long enough to glance at their head, skin, eyes, nose, and general appearance, and then if nothing seems wrong, she passes them on.

[1] *Civics and Health*, 292–94.

[2] Helen L. Pearce, "The Place of the School Nurse," *British Journal of Nursing* (August 17, 1907).

In these superficial examinations, the trained school nurse becomes an expert in the detection of evidences of skin and eye diseases, adenoids, enlarged tonsils, suspected tuberculosis, and the first signs of various children's diseases. She is the sieve through which the children pass before being brought directly to the physician, and it is a matter of great importance that her training be thorough and her observation acute.

The work is carried on in the school station where all necessary surgical supplies and utensils are kept, and the nurse gives the children practical instruction in bandaging, dressings, and in various points of cleanliness and personal hygiene.

In Philadelphia the physician and nurse visit each school daily at a stated time. A room is set apart in each school for their use; the pupils are sent down to the office by the teachers and are individually examined. A card system is used and for each child a card is sent to the principal. Records are kept showing the date of treatment, care, etc. When the pupil needs treatment and no physician is in attendance at home, a paper is signed by the parent asking the doctor and nurse to take care of the case. For pediculosis, cards with printed directions for treatment are sent to the homes. Every day the nurse goes through one or more classrooms, observing the condition of each child. This is done with no interruption of classroom work. No excuse for non-treatment is accepted. If the parents are too poor to provide the necessary glasses, and the nurse has ample proof of such a condition, she devises some method of obtaining the glasses. In every case, however, the parents are asked to pay a small sum toward the expense and, by giving a trifle each week, this can usually be done. The idea is to make the parents feel their responsibility for the child's health and not to encourage pauperization. It has been observed that the effect of home visiting is to awaken interest and to develop the feeling of responsibility in the parents, rather than to make them more dependent on outside agencies.

In New York each nurse has from two to seven schools with an average of 4,000 children. She visits the schools in the morning usually, for routine treatments and special cases. As little interruption as possible of the regular school work is incurred. At a given signal, children whose names have previously been sent to the teachers go to the medical room to see the inspector. At another signal those who are to go to see the nurse are excused. When school closes at 3:00 P.M., the

nurse makes the home visits, ten being considered the average number for each day. One visit does not always bring results; sometimes as many as five visits have to be made before parents realize the importance of medical care.

The routine inspection consists of a class to class examination which is done systematically and regularly. The children pass before the nurse, pulling down their eyelids as they pass, the condition of the hands being noted at the same time; the throat and hair are also examined. In New York at present there is no time to do this oftener than about once a month. Miss Rogers says:

> The number of children which one nurse can properly examine each week and take care of is about three thousand. Where conditions are bad, the routine examination should be made every week; in other localities every second week is sufficient.

The doctor and the nurse do not always visit the school at the same time. A code is used to denote the principle affections from which the children suffer. If there are any cases for treatment, the doctor leaves a card for each child indicating the trouble by the code number. In the same way the nurse leaves cards showing the cases which ought to be referred to the physician. The treatment in each of these type cases is very much the same. When children are to be treated at home, simple and explicit directions are given on the card.

The question of securing adequate attention for the poor child is still one of the unsolved problems. In Cincinnati they have special dispensaries for school children, and abroad this is being carried out more fully than in America. In New York the regular dispensaries in the congested districts cannot treat all the children who are brought by the nurses. Miss Rogers hopes to see school dispensaries established, where the children can be sent directly from school.

> The hours should be arranged so that there will be no loss of school time for the children and where our own physicians and nurses will be in attendance. Every one then connected with the work should have the same interest and the responsibility could not be shifted from one division to another.[1]

A great many of the blank forms used in the various systems of medical inspection will be found in *Medical Inspection of Schools*, by

[1] Lina L. Rogers, "Some Phases of School Nursing," *American Journal of Nursing* (September, 1908); also *ibid.* (January, 1907).

Gulick and Ayres, and in Dr. Newmayer's *System Employed by the Trained Nurses in the Schools of Philadelphia.*

The following outfit is provided for the medical room in each of the New York schools. I may say, however, that the equipment is often of the crudest kind and quite inadequate in view of modern clinical requirements:

1 screen	Boracic acid powder
1 cabinet	Tr. green soap
2 chairs (1 high)	Collodion
1 table	Vaseline
1 scrap basket	White precipitate ointment
12 towels	2 basins (white granite)
Absorbent cotton	1 glass jar (1 gallon)
Absorbent gauze	1 ointment jar (glass)
Bandages	Bichloride mercury tablets

I quote further from Miss Rogers:

The supervising nurse has entire charge of the school nurses and is responsible for the efficiency and character of the work performed by each nurse in all boroughs of the city. It is her duty to make arrangements for beginning work in the schools and to see that the necessary supplies are provided by the department of education. She also regulates the proper amount of work for each nurse, making whatever changes and transfers are necessary, and inspects the work of each.

The supervising nurse receives all the reports, which she examines and corrects. These are sent in, one every day, one every ten days, and one every month. The supervisor makes a general summary which is forwarded to the chief inspector. The nurses report to her at a weekly meeting. In New York the nurses must pass the civil-service examination and new appointees are selected from the list. There has been much difficulty in keeping the service free from undesirable applicants, but standards are being gradually raised. The number of hours' work given by the nurse vary also, the extremes being from 8:00 A.M. to 5:00 P.M. in one city, and from 9:00 A.M. to 3:30 P.M. in another. The nurses in New York work half-days on Saturday, and during summer when they are working with the babies they take turns on Sundays for emergency calls. The home visits nearly always require longer than the stated time, and nurses find themselves often as late as 7:00 P.M. before they are through. The records have to be made up at night, and this adds to the work considerably. The average

salary is $75 per month, though it ranges all the way from $50 to $100 per month. Supervisors get from $900 to $1,200 per year.

Dr. Frederick Rose at the International Congress of Nurses held in London in July, 1909,[1] dealt with the significance of the movement:

> Great developments may be expected within the next ten years from the institution of school medical inspection. It will soon include school medical treatment in hospitals or school clinics. This again must lead to some form of general medical inspection before school age; and generally speaking, the question of the home conditions of school children, which lies at the root of the whole matter, will receive more detailed and effective consideration. The whole development of school hygiene is pointing in the direction of a ministry of Public Health, the municipalization of the health services of the nation. In a few years, on the basis of one doctor and two nurses to every 2,000 children, about 4,000 doctors and 8,000 nurses may be necessary. It is therefore obvious that the occupation of the school nurse is one of the coming professions for women. It is a reasonable, interesting, and important profession, with a fixed salary, a recognized status, regular work, and a suitable amount of leisure.
>
> Women entering this profession of school nurses will be privileged to take part in one of the most far-reaching and important developments of modern times. It is beyond reasonable doubt that the coming of school hygiene will gradually effect a complete change in our views on education. . . . . The development of school nursing will assist medical science in the accomplishment of its three great stages of progress—the abandonment of the first or primitive stage, that of the mere detection and cure of disease—the second stage, that of the prevention of disease—and the final and greatest stage, the raising of the standard of vitality of the whole human race.

THE PREPARATION OF THE SCHOOL NURSE

It is evident that this work is here to stay and it is probable that it will be extended into wider and wider fields. While not strictly nursing in the accepted sense, it requires the knowledge, the skill, and the training which is at present given nowhere except in the nursing schools. It is essential that this training should be broad, sound, and thorough. The school nurse should be a graduate of a recognized general training school, which includes special work with children, a good experience in eye, ear, nose, and throat work, and in infectious and skin diseases. She should also have a thorough training in everything that relates to nutrition and general hygiene.

[1] *British Journal of Nursing* (November 20, 1909).

There can be no question about the high personal qualifications which she should bring to her work. Such a vocation demands educated women, women who not only know how to do things but why they do them; women of broad sympathies and social understanding as well as practical skill. This enlarging field of nursing activities makes a new and direct call on the hospital training schools to uphold high standards of entrance requirements and to furnish a type of professional training which will fit the student not only for private and hospital service, but for the social and educational field as well.

But while the nursing school is responsible for her strictly professional education, much of the training of the school nurse must inevitably come after graduation. If she is to be an expert in her field, she must specialize on the subject of children, on their physical and mental constitution, on child hygiene and child psychology, on children's diseases, the history of infant mortality, the social movements which involve child welfare, etc. She should also be in touch with the educational problem, so that she can co-operate sympathetically with the work and the ideals of the school. From the standpoint of sanitation and public health, she should know something of the housing problem, of municipal as well as domestic sanitation, and of such laws and local regulations relating to them as will enable her to lay hold promptly on all the agencies of relief.

Sufficient mention has been made of the social functions of the school nurse and of the many ways in which she can be of service in the home and in the community. To do this effectively she must know the social agencies at work in her city, what they stand for, and how she can co-operate with them. She should also be in touch with the broader social and industrial movements, and should have, if possible, some fundamental knowledge of sociological and economic principles. In addition, she must know how to make her knowledge available to others. Her teaching must be simple, direct, concrete, and forceful, if it is to reach the children and the people with whom she deals. This requires some knowledge of the teaching art.

It might readily be urged that such a preparation as is here outlined would take years to acquire. Eventually some special training will probably be required by those employing school nurses. In the meantime the wide-awake nurses are doing what they can through reading and lectures and special courses, such as are given by the schools of

civics and philanthropy, the better to fit themselves for their work. The practical experience gained in district nursing cannot be overestimated and, as has been pointed out, the administration of school nursing under some such nursing organization would tend to secure a type of woman better trained and usually more devoted to social service. Much can be done undoubtedly through conferences of school physicians and school nurses, and general meetings with teachers and supervisors in physical education, domestic science, etc. Discussion on the main phases of this work must find a place in educational, medical, and nursing conferences, and will inevitably bring about a clearer understanding and more active co-operation between the rank and file of these professions.

The great demand, both on the part of the public and of nurses themselves for fuller preparation in all these branches of nursing, has been felt for some time. The need now is for an institution or organization that will give the preparation required. The various teachers' colleges, in association with hospitals and hospital-training schools for nurses, are the means at hand. The one significant attempt to meet this problem is that undertaken by Teachers College at Columbia University. Through the generosity of Mrs. Helen Hartly Jenkins this institution presents a one-year course under the control of the Department of Nursing and Health. It provides an experiment and experience upon which further organization of training schools for school nurses may well be based. Its distinct aim is to prepare "teacher nurses" for district nursing, school nursing, board of health work, etc. Its scope is much as outlined above, combining the social, economic, educational, sanitary, and nursing phases of the work. A high-school certificate, or its equivalent, and a diploma from a recognized training school for nurses are required for entrance. Through affiliation with the New York School of Philanthropy and the Henry Street Nurses' Settlement, the students have unusual opportunities for combining theoretical and practical work in a very broad field. They will also have the advantage of observing closely the methods employed in the school-nursing and public-health work of New York City. A group of students is already at work specializing in various fields. It is hoped that this type of course will prove serviceable in helping to solve the problem of the special preparation of the school nurse.

THE PROFESSIONAL TRAINING OF CHILDREN'S NURSES

MARY L. READ

We are familiar with the redundant statements and appeals of Pestalozzi, Froebel, and Spencer regarding the education of parents in the care and training of children, and the oft-quoted comments of English and American pediatricians of high authority on the ignorance of mothers as among the chief causes of infant mortality. On the programs of such conferences as the International Mothers' Congress and the International Congress for Home Education there frequently appear addresses and discussions on such topics as "The Training of Nursery Maids," "A National School for Women," "Supplementary Education for Girls to Fit Them as Wives and Mothers." Yet it is perfectly patent that such education, briefly and practically presented, in the fundamentals of child care and training is rarely provided.

The phase of this problem with which the present report is concerned is the professional training of women for paid service as intelligent and trained care-takers of little children, either in private homes or in institutions. It presents the results of a superficial survey of the present situation, including the demand for such a service; its opportunities and recompense; the provisions for training; the meeting of practical details of curriculum, practice, length of training, social relations of employer and employee; and suggestions for future developments.

In European countries.—Among the first pioneers in providing practical, comprehensive training in the physical care and early development of infants and little children is the Pestalozzi-Froebel Haus in Berlin, where since 1874, under the guidance of Froebel's gifted niece, Henrietta Schrader-Breymann, a "mother school" and kindergarten of truly Froebelian simplicity has been maintained. A direct offshoot of this is the Sesame House in London.

About 1902 at Ghent, Belgium, a School for Mothers was started under the enthusiastic direction of Dr. Miele, in connection with the Bureau de Bienfaisance. This is part of the comprehensive system of infant hospitals, crèches, milk depots, and dispensaries. It includes

health talks to mothers (such as are now given at many of our own milk stations and infants' clinics in the large cities), and training courses for girls as infants' nurses, with practice in the crèches.

In Paris the Ecole d'hygiène d'éducation familiale et sociale d'enseignement ménager, which was founded by Mme Augusta Moll-Weiss at Bordeaux in 1897, removing to Paris in 1904, provides a most comprehensive course. One section is for professors and women of the higher classes; a second section for women intending to enter household service as nurses, cooks, etc.; a third section for women of the working classes, and a fourth for instruction in domestic economy and home management.

England appears to have developed more centers for the training of women as professional children's nurses than has any other country.

The list includes Norland Institute, the Liverpool Ladies' Sanitary Association at Liverpool, the Princess Christian Institute at Manchester, the Cheltenham Guild of the Dames of the Household, Sesame House, St. Christopher's at Tunbridge Wells, and St. Mary's Nursery College, London.

The reports and prospectuses of these institutions uniformly state that the demand for their graduates far exceeds the supply. The salary ranges from £24 per year for recent graduates to £50 for the more experienced. Most of the students are in residence. The training school is also usually a resident nursery where children from infancy to six months are received and their care is paid for by parents or guardians. Every effort is made to maintain a home atmosphere. In general, the course includes both theory and practice in hygiene, nursery cooking and laundry, home nursing, children's sewing, nursery management, kindergarten principles and practice. The length of the course varies from three months to one year. There is no salary during such training, but a fee is charged to cover tuition and living, averaging from £3½ to about £6 per month, according to the particular school. "Lady nurses for children," "children's nurses," "nursery nurses," "nursery governesses" are different terms there used for the same profession. All of these schools recognize both the physical and the spiritual nature of the child, and the need of training for the care of the child's physical, mental, and moral development.

In the United States.—The training in this country has been chiefly for "infants' nurses," and "nursery maids," and the training has been

done almost wholly by babies' hospitals. The Babies' Hospital of New York City has maintained such a course for about twenty years. The course includes six months in the hospital, with instruction in infant hygiene, care and feeding, the rudiments of kindergarten work, and ward duty in the care of sick and convalescent children; two months are then spent on probation in private families before a certificate is granted. Nurses receive $7 a month during training, and $25 per month after graduation during the first year, usually rising to $30 per month thereafter. About thirty-five such nurses are trained annually, and the demand is often for one thousand in the same period. The requirements for admission are good health, good references, and ability to read. Married women and widows are not received. Most of the girls are from twenty to twenty-five years of age. The applications for admission are so numerous that girls frequently have to wait six months after acceptance before they can enter. These girls seldom have more than a common-school education. In the families of employers they are ranked as domestic servants, called by their first names, and have their meals in the kitchen with the other servants; they usually sleep either in the children's or the cook's room. Dr. Holt has expressed the opinion that young women of better education and personality will not enter training courses for nursery maids, because of this social relation to the family.

Similar training schools are reported to be conducted at the following institutions: St. Christopher's Hospital, Brooklyn; Nursery and Child's Hospital, New York City; The Babies' Hospital, Newark, N.J.; St. Margaret's Home, Albany; Infants' Hospital, Boston; The Pittsburgh Home for Babies, Pittsburgh, Pa.

A course for nursery maids that was started in connection with the kindergarten training school at Pratt Institute some years ago was abandoned because the young women who entered, if they were of desirable intelligence and personality, usually concluded by taking the entire kindergartner's course.

A course for "kindergarten nurses" was started by the Y.W.C.A. of Harlem, New York City, in 1906, but was later abandoned—for what reason it has been impossible to learn.

An attempt was made some years ago to train nursery maids in connection with the day nursery of Neighborhood House, Buffalo, but this also was abandoned for some unknown reason.

The writer has been unable to learn of any training course in this country similar to that offered by the English schools.

REPORT OF A PRELIMINARY STUDY ON THE NURSEMAID PROBLEM CONDUCTED IN NEW YORK CITY, 1910

The study took up the problem of the nursemaid from the standpoint of: (1) the employer; (2) the employee; (3) the employment agency; (4) the nursemaid training school; (5) the observer of nursemaids in parks and boulevards. Questionnaire blanks were arranged for employer, employee, and observer. Interviews were held with managers of employment agencies, directors of training courses, applicants for nursemaid positions. Advertisements were inserted in the Sunday papers both for employment and for nursemaids; postcards were sent to persons advertising for nursemaid positions; advertisements for nursemaid and for mother's helper were inserted in the *Outlook*. The returns from these questionnaires, interviews, and advertisements are too few to draw final conclusions, but they at least give an insight into the situation.

Only twelve replies were received from employers. Seven of these found no difficulty in securing the kind of nursemaid they found satisfactory; five others did. Only one employer paid less than $20 monthly, some as high as $40. With one exception, the nursemaid was treated as a servant, was called by her first name, had her meals in the kitchen with the other servants, usually was on duty from 7 A.M. to 7 P.M. with a half-day off on alternate Sundays and Thursdays. The qualifications specified as necessary (given in the order of their frequency in replies) were cleanliness, neatness, honesty, politeness, faithfulness in duties, fondness for children.

The applicants interviewed at employment agencies were all girls of very limited intelligence and training, and at several agencies the investigator waited all the morning without a single applicant for such a position appearing. The girls interviewed wanted $18 to $30 monthly, and were willing to assist in household work, but objected to wearing a uniform. Some of the employment agencies when questioned directly said they had difficulty in finding suitable nursemaids; others reported no difficulty in supplying the demand, but stated that the training consisted only of experience in previous households. The employment department of the Charity Organization Society reported a great demand

for young girls to "mind the baby," at $12 to $15 a month. The employment department of the Young Women's Christian Association reported that they did not register nursemaids "nor other domestic servants," but that they had calls for nursery governesses and for mothers' helpers. The "nursery governess" is understood by them to be a young woman of superior breeding whose influence on the children is refining; she sometimes has also the physical care of the children, but in some families this is done by the mother or by a nursemaid. The greatest demand is for the English trained nursery governesses, and after that for Hanoverian or French. The "mother's helper" they defined as intermediate in social rank and responsibilities between the nursemaid and the nursery governess.

Postcards were sent for about two weeks to all applicants for nursemaid positions advertising in the chief city dailies, but only one in five came for an interview, and these were chiefly the uneducated, untrained type. The responses to advertisements inserted in the daily papers were equally unsatisfactory. Two advertisements were inserted in the same issue of the *Outlook*, one for a nursemaid, the other for a mother's helper. One reply was received for the former, and twenty for the latter. These twenty deserve analysis. One was English, the others American, chiefly from the eastern states. Three were trained hospital nurses, four were college women, and seven more had a high-school education, one was a teacher, four were nursery governesses, two were nurses, and twelve others reported experience in the care of children. Many specified willingness to help with sewing or light household duties. The wages requested were from $20 to $30 monthly.

Only twelve questionnaire blanks were returned from observations of nurses; six of these reported no adverse criticisms, one reported unseemly conduct, three ill-treatment, and two neglect. The blank was so prepared that any adverse criticism had to be based upon an actual concrete case, with particulars, on the date the observation was made.

The directors of two of the training schools for nursery maids (connected with hospitals) were interviewed. They both stated that the demand for their graduates exceeded the supply, and that the applications for admission were far in excess of their facilities for training. Their students are chiefly young girls of only common-school education. One of the physicians longest connected with such training expresses the opinion that it can be conducted equally well in co-operation with day

nurseries and kindergartens; but that because of the social status of the nursemaid in the family it would be difficult to find young women of the desired education and personality to take the training.

A study of some fifty day nurseries in one of our largest cities reveals that much less than half of the care-takers, infants' nurses, or matrons are trained for the physical or mental care of the child. Inspection of the curriculum of kindergarten training schools indicates that few of them give instruction in the physical nature and care of the child. A report based on a study of forty normal schools, presented at the conference of the Association for the Study and Prevention of Infant Mortality at Baltimore last November, states that hygiene is very impractically and inadequately taught in most of these schools.

The questions which this study raises are these:

1. Should not all training schools for teachers include due recognition of the child's physical life and its development and care?

2. Is it not possible by co-operation between normal schools or kindergartens and day nurseries or foundling homes to give such a practical training, and that in the course of a few months?

3. What agencies should take the initiative in this country in providing such a course for mother's helpers and nursery governesses as is now provided by the training schools for children's nurses in England?

4. Is it not possible by such a course to train great numbers of young women who would live at home and give only day service to one or more families, thus helping to solve both the question of social status and of nurse hire for the family of moderate means?

Following is a more detailed description of these English schools for which data is at hand.

At Norland Institute the training lasts for one year, the fees amounting to £74 8*s*., which includes living, laundry, tuition, and the first uniform. The first twelve weeks are spent at Norland Institute (which is also a resident nursery). Here thorough instruction is given in cookery, laundry work, housewifery, hygiene, nursery management, the making of simple garments. The student then serves a term in one of the children's hospitals, after which she returns to the Institute and receives a course of instruction in the Froebelian methods of teaching and becomes first an under nurse and afterwards charge nurse in the Norland Nurseries. This Institute was started in 1894 and about one thousand nurses have received the training.

The Liverpool Ladies' Sanitary Association began with non-residential training, but in 1908 opened its Residential Training Home for Lady Nurses for Children. Educated ladies receive here a six months' training as children's nurses. Quoting from the announcement:

The demand for fully trained, competent, well-educated women as Lady Nurses for children is at present much in excess of the supply, and it is hoped that in the future the profession will be adopted by an increasingly large number of those who have a real love for children.

If, as we all must admit, true education begins in the nursery, the value of the well-trained nurse cannot be over estimated. The L.L.S.A. have recognized this in drawing up their syllabus, and the training given is calculated to impress upon the nurse that the mental, moral, and spiritual characteristics of the child must all receive their due share of consideration, and that the nurture of the young includes alike the care of the mind and the body.

Special lecture courses by selected instructors are given on nursery management, hygiene, feeding of infants, and kindergarten; and special instruction is given in needlework, elementary cooking, and laundry work. Practical experience in the care of infants and young children is given in the L.L.S.A Day Nursery.

The tuition fee for non-resident students is £20; for residents £30, including board but not laundry. Candidates come for a month's probation; if not considered suitable for the training, they may be asked to withdraw without explanation. Those completing the course are expected to wear the uniform—a dark green bonnet and coat. On the completion of two years' satisfactory service, a second certificate and the badge of the Association are given.

The Princess Christian College at Manchester was started in 1904 "for training ladies as children's nurses," under the management of the Gentlewomen's Employment Association (and later incorporated as a separate company) under the patronage of Princess Christian.

The college was established "to meet the increasing demand for ladies as children's nurses, and to provide the necessary training for a career which is so eminently suited for educated women who have a natural sympathy with young children."

A resident nursery is maintained for children of the better class only, the minimum period for their residence being three months, and the maximum age six years. Here, as in the other similar training schools, the nursery department is the vital feature of the training. The sub-

jects taught include general rules of health, first aid and home nursing, infant feeding, nursery management, domestic work, nursery laundry work and cookery, needlework, kindergarten games, drilling, etc.

Candidates are not admitted under twenty years of age, and must be resident in the college. Students are on probation the first fortnight, but may be required to withdraw at any time if found unsuitable for the work. The work is in charge of a principal, and under her are the two resident teachers—one for domestic science, laundry, cookery, and the other for needlework and housewifery—a hospital trained nurse in charge of the nurseries, and three outside lecturers—one for kindergarten, one for physiology, first aid, etc., and one for child-study.

In the *Fourth Annual Report* (1908) of the college are printed the rules for employers and for employees, covering such items as salaries, duties, holidays, testimonials, social relations, etc. Nurses are entitled to four weeks' annual holiday; are not to scrub grates or floors, nor carry coal, though they will dust rooms and make beds; are not to take their meals with the house servants (nursery maid excepted), nor in their bedrooms; are to be addressed as Miss ———; are obliged to wear the college uniform when on duty. A month's notice is required before the termination of an engagement. During the first two years after graduation the college finds the posts for the nurses, and collects their salary for them in quarterly instalments; thereafter they find their own posts and arrange and collect their own salaries.

The training consists of two terms of fifteen weeks each, the fee for tuition, living, and laundry being sixty guineas.

The Sesame House, 43A Acacia Road, London, a training college planned on the lines of the Pestalozzi-Froebel Haus, Berlin, was opened in 1899 under the auspices of the Sesame Club. As stated in the first yearbook, the general purpose is to fit girls and women more fully for the woman's life, and the second purpose is to fit girls who need to earn their livelihood, as certified lady-nurses to children, as kindergarten teachers, as nursery governesses, for whom there is a great demand, and for settlement work. Quoting from this same yearbook:

> Many girls, unfitted by previous education to compete in the examinations of the day, yet in possession of gifts to be in no wise under-valued, are thus enabled to prepare themselves for a sheltered and refined life, which offers far larger opportunities of out-giving and of general self-development than the mechanical life of a bookkeeper and shorthand writer.

The work, both theoretical and practical, is so arranged as to center around the education and nurture of children and the internal management of a household in all its branches. Both resident and non-resident students are received. There are three terms of thirteen weeks each, the work of each term being guided by the season. Students may enter at the beginning of any term. A certificate is granted to students satisfactorily finishing the year's training.

The mornings are given to practical work in the house, kitchen, or garden, or with the children. This includes a regular course in cookery, house management, cleaning, nursery laundry, needlework (children's garments and mending), vegetable and flower gardening. In the afternoons, classes are given in nature-studies, singing, geometry, art, domestic hygiene, and house sanitation, Froebel occupations, educational history, principles, and methods.

The children of the free kindergarten and the Sesame Nursery House furnish the practice. A fourth term of three months, in the Sesame Nursery House, in the care and feeding of infants is required of students training as lady nurses.

The tuition fee is £10 per term; board and residence is £14 per term, with accommodations for twenty-eight.

St. Mary's Nursery College, in London, was opened in 1908, "to provide for the training of Catholic gentlewomen as nursery nurses." The college "provides an inexpensive training for educated women who have natural sympathy with little children." The training includes:

I. *A practical course:*
- The daily care and feeding of resident infants and children, from a fortnight to five years old
- The duties and management of a nursery (all the work being done by the students)
- Nursery cooking
- Nursery laundry
- Needlework (cutting-out and making of children's clothes, knitting, mending)

II. *A course of instruction given by qualified teachers on the following subjects:*
- The religious teaching of young children
- Nursery hygiene
- Child physiology
- First aid
- Kindergarten occupations, games, and songs

The principal, Mrs. Bernard Mole (Clapham Maternity Hospital certificate), is assisted by a trained children's nurse, domestic-economy and kindergarten (Froebel Union) teachers, medical and other lecturers. Quoting from the announcement:

> If, as is generally admitted, true education begins in the nursery, the value of a well-trained nurse cannot be over-estimated. The training will also be of value to those entering upon the responsibilities of married life and to others who may not intend to adopt nursing as a profession.
>
> Students satisfactorily completing the six months' course are granted a certificate and are entitled to wear the uniform of the College. The fee for six months' training, board, and residence is £36.

At the Cheltenham Crèche a three-months' course is given, to either resident or non-resident students, there being accommodations, however, for only four residents. The fee for three months' residence and training is £10.

The National Froebel Union has recently created a new section designated "The Child Attendant Association" which grants a certificate of practical fitness for the duties of such attendants, after training under conditions which meet with their approval and which are open to their inspection. Their "provisional scheme for training child attendants for infants' and nursery schools" calls for a six-months' training with daily work under supervision in a selected school, such work including reception and inspection of children for symptoms of disease, washing, supervision of lavatories, disinfection of garments when needed, first aid, organization and supervision of lunches. It also requires three twelve-hour series of class lectures and demonstrations on (1) elements of child hygiene and care, (2) characteristics of normal and abnormal children, (3) personal care, first aid. The training is estimated to cost for six months £4 4*s*. to £6 6*s*.

Two London kindergartens are now giving such training.

In a notable address before the Religious Education Association in 1907 on the "Relation of the Home to Moral and Religious Education," Commissioner Elmer E. Brown urged the establishment of special training courses for young women of education and personality to care for little children under the school age; and the consequent development of a new profession for women. He calls attention to the intimate relation between the moral education of little children and their physical welfare, especially their habits of eating, sleeping, and related activi-

site which involve the nervous system. He points out the great range of requirements both of knowledge and judgment—nutrition, the prevention of disease, the treatment of minor ailments, the correction of faults of temper and disposition, the first steps in learning, the supervision of games, the telling of stories, the first hint of the mysteries of religion.

It is accordingly desirable [he adds] that in training for this service we should break away from the narrower traditions of the kindergarten. Many good precedents may be drawn from the training of nurses in hospitals and sanitariums, but even such precedents must be followed with caution. These things seem clear to this extent, at least, that the training should join theory with practice, and that the work must be partly pedagogical and partly parallel to that of the ordinary nurses' training school.

He suggests that the theoretical instruction could probably best be given in connection with a college or university, thus the more readily attracting young women of the desired preliminary training, the students having access to a babies' hospital, foundlings' home, day nursery, or other children's institution.

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